

	A	B	C	D	E	F	G	H	I	J	K	L							
1	<b>General UCL Statistics for Data Sets with Non-Detects</b>																		
2	<b>User Selected Options</b>																		
3	From File MW.wst																		
4	Full Precision OFF																		
5	Confidence Coefficient 95%																		
6	Number of Bootstrap Operations 2000																		
7																			
8																			
9	<b>1,2-Dichlorobenzene</b>																		
10																			
11	<b>General Statistics</b>																		
12	Number of Valid Data			55	Number of Detected Data			2											
13	Number of Distinct Detected Data			2	Number of Non-Detect Data			53											
14					Percent Non-Detects			96.36%											
15																			
16	<b>Raw Statistics</b>				<b>Log-transformed Statistics</b>														
17	Minimum Detected			0.93	Minimum Detected			-0.0726											
18	Maximum Detected			1.1	Maximum Detected			0.0953											
19	Mean of Detected			1.015	Mean of Detected			0.0114											
20	SD of Detected			0.12	SD of Detected			0.119											
21	Minimum Non-Detect			0.5	Minimum Non-Detect			-0.693											
22	Maximum Non-Detect			1300	Maximum Non-Detect			7.17											
23																			
24	Note: Data have multiple DLs - Use of KM Method is recommended				Number treated as Non-Detect			55											
25	For all methods (except KM, DL/2, and ROS Methods),				Number treated as Detected			0											
26	Observations < Largest ND are treated as NDs				Single DL Non-Detect Percentage			100.00%											
27																			
28	<b>Warning: Data set has only 2 Distinct Detected Values.</b>																		
29	This may not be adequate enough to compute meaningful and reliable test statistics and estimates.																		
30	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).																		
31																			
32	Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.																		
33																			
34	The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.																		
35	Those methods will return a 'N/A' value on your output display!																		
36																			
37	It is necessary to have 4 or more Distinct Values for bootstrap methods.																		
38	However, results obtained using 4 to 9 distinct values may not be reliable.																		
39	It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.																		
40																			
41																			
42	<b>UCL Statistics</b>																		
43	<b>Normal Distribution Test with Detected Values Only</b>				<b>Lognormal Distribution Test with Detected Values Only</b>														
44	Shapiro Wilk Test Statistic			N/A	Shapiro Wilk Test Statistic			N/A											
45	5% Shapiro Wilk Critical Value			N/A	5% Shapiro Wilk Critical Value			N/A											
46	<b>Data not Normal at 5% Significance Level</b>				<b>Data not Lognormal at 5% Significance Level</b>														
47																			
48	<b>Assuming Normal Distribution</b>				<b>Assuming Lognormal Distribution</b>														
49	DL/2 Substitution Method				DL/2 Substitution Method														
50	Mean			14.64	Mean			-0.631											
51	SD			87.81	SD			1.684											
52	95% DL/2 (t) UCL			34.46	95% H-Stat (DL/2) UCL			4.641											

	A	B	C	D	E	F	G	H	I	J	K	L
53												
54					Maximum Likelihood Estimate(MLE) Method	N/A				Log ROS Method		
55					MLE method failed to converge properly					Mean in Log Scale	N/A	
56										SD in Log Scale	N/A	
57										Mean in Original Scale	N/A	
58										SD in Original Scale	N/A	
59										95% t UCL	N/A	
60										95% Percentile Bootstrap UCL	N/A	
61										95% BCA Bootstrap UCL	N/A	
62										95% H-UCL	N/A	
63												
64					Gamma Distribution Test with Detected Values Only					Data Distribution Test with Detected Values Only		
65					k star (bias corrected)	N/A				Data do not follow a Discernable Distribution (0.05)		
66					Theta Star	N/A						
67					nu star	N/A						
68												
69					A-D Test Statistic	N/A				Nonparametric Statistics		
70					5% A-D Critical Value	N/A				Kaplan-Meier (KM) Method		
71					K-S Test Statistic	N/A				Mean	0.934	
72					5% K-S Critical Value	N/A				SD	0.0251	
73					Data not Gamma Distributed at 5% Significance Level					SE of Mean	0.00528	
74										95% KM (t) UCL	0.943	
75					Assuming Gamma Distribution					95% KM (z) UCL	0.942	
76					Gamma ROS Statistics using Extrapolated Data					95% KM (jackknife) UCL	1.044	
77					Minimum	N/A				95% KM (bootstrap t) UCL	N/A	
78					Maximum	N/A				95% KM (BCA) UCL	1.1	
79					Mean	N/A				95% KM (Percentile Bootstrap) UCL	1.1	
80					Median	N/A				95% KM (Chebyshev) UCL	0.957	
81					SD	N/A				97.5% KM (Chebyshev) UCL	0.967	
82					k star	N/A				99% KM (Chebyshev) UCL	0.986	
83					Theta star	N/A						
84					Nu star	N/A				Potential UCLs to Use		
85					AppChi2	N/A				95% KM (t) UCL	0.943	
86					95% Gamma Approximate UCL (Use when n >= 40)	N/A				95% KM (% Bootstrap) UCL	1.1	
87					95% Adjusted Gamma UCL (Use when n < 40)	N/A						
88					Note: DL/2 is not a recommended method.							
89												
90					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
91					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
92					For additional insight, the user may want to consult a statistician.							
93												
94												
95					1,4-Dichlorobenzene							
96												
97					General Statistics							
98					Number of Valid Data	55				Number of Detected Data	3	
99					Number of Distinct Detected Data	2				Number of Non-Detect Data	52	
100										Percent Non-Detects	94.55%	
101												
102					Raw Statistics					Log-transformed Statistics		
103					Minimum Detected	1.5				Minimum Detected	0.405	
104					Maximum Detected	1.9				Maximum Detected	0.642	

	A	B	C	D	E	F	G	H	I	J	K	L					
105					Mean of Detected	1.633				Mean of Detected		0.484					
106					SD of Detected	0.231				SD of Detected		0.136					
107					Minimum Non-Detect	0.64				Minimum Non-Detect		-0.446					
108					Maximum Non-Detect	1600				Maximum Non-Detect		7.378					
109																	
110	Note: Data have multiple DLs - Use of KM Method is recommended						Number treated as Non-Detect					55					
111	For all methods (except KM, DL/2, and ROS Methods),						Number treated as Detected					0					
112	Observations < Largest ND are treated as NDs						Single DL Non-Detect Percentage					100.00%					
113																	
114	Warning: Data set has only 2 Distinct Detected Values.																
115	This may not be adequate enough to compute meaningful and reliable test statistics and estimates.																
116	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).																
117																	
118	Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.																
119																	
120	The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.																
121	Those methods will return a 'N/A' value on your output display!																
122																	
123	It is necessary to have 4 or more Distinct Values for bootstrap methods.																
124	However, results obtained using 4 to 9 distinct values may not be reliable.																
125	It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.																
126																	
127																	
128	UCL Statistics																
129	Normal Distribution Test with Detected Values Only					Lognormal Distribution Test with Detected Values Only											
130	Shapiro Wilk Test Statistic			0.75		Shapiro Wilk Test Statistic			0.75								
131	5% Shapiro Wilk Critical Value			0.767		5% Shapiro Wilk Critical Value			0.767								
132	Data not Normal at 5% Significance Level					Data not Lognormal at 5% Significance Level											
133																	
134	Assuming Normal Distribution					Assuming Lognormal Distribution											
135	DL/2 Substitution Method					DL/2 Substitution Method											
136	Mean			18.14		Mean			-0.347								
137	SD			108.1		SD			1.684								
138	95% DL/2 (t) UCL			42.53		95% H-Stat (DL/2) UCL			6.158								
139																	
140	Maximum Likelihood Estimate(MLE) Method			N/A		Log ROS Method											
141	MLE method failed to converge properly					Mean in Log Scale			-0.479								
142																	
143						SD in Log Scale			0.455								
144						Mean in Original Scale			0.686								
145						SD in Original Scale			0.332								
146						95% t UCL			0.761								
147						95% Percentile Bootstrap UCL			0.763								
148						95% BCA Bootstrap UCL			0.772								
149																	
150	Gamma Distribution Test with Detected Values Only					Data Distribution Test with Detected Values Only											
151	k star (bias corrected)			N/A		Data do not follow a Discernable Distribution (0.05)											
152	Theta Star			N/A													
153	nu star			N/A													
154																	
155	A-D Test Statistic			N/A		Nonparametric Statistics											
156	5% A-D Critical Value			N/A		Kaplan-Meier (KM) Method											

	A	B	C	D	E	F	G	H	I	J	K	L
157					K-S Test Statistic	N/A					Mean	1.509
158					5% K-S Critical Value	N/A					SD	0.059
159					Data not Gamma Distributed at 5% Significance Level					SE of Mean		0.0108
160										95% KM (t) UCL		1.527
161					Assuming Gamma Distribution					95% KM (z) UCL		1.527
162					Gamma ROS Statistics using Extrapolated Data					95% KM (jackknife) UCL		1.524
163					Minimum	N/A				95% KM (bootstrap t) UCL		N/A
164					Maximum	N/A				95% KM (BCA) UCL		1.9
165					Mean	N/A				95% KM (Percentile Bootstrap) UCL		1.9
166					Median	N/A				95% KM (Chebyshev) UCL		1.556
167					SD	N/A				97.5% KM (Chebyshev) UCL		1.576
168					k star	N/A				99% KM (Chebyshev) UCL		1.616
169					Theta star	N/A						
170					Nu star	N/A				Potential UCLs to Use		
171					AppChi2	N/A				95% KM (t) UCL		1.527
172					95% Gamma Approximate UCL (Use when n >= 40)	N/A				95% KM (% Bootstrap) UCL		1.9
173					95% Adjusted Gamma UCL (Use when n < 40)	N/A						
174	<b>Note: DL/2 is not a recommended method.</b>											
175												
176	<b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>											
177	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
178	For additional insight, the user may want to consult a statistician.											
179												
180												
181	<b>2,4-Dimethylphenol</b>											
182												
183	<b>General Statistics</b>											
184					Number of Valid Data	55				Number of Detected Data		4
185					Number of Distinct Detected Data	4				Number of Non-Detect Data		51
186										Percent Non-Detects		92.73%
187												
188	<b>Raw Statistics</b>						<b>Log-transformed Statistics</b>					
189					Minimum Detected	5.2				Minimum Detected		1.649
190					Maximum Detected	17				Maximum Detected		2.833
191					Mean of Detected	8.875				Mean of Detected		2.063
192					SD of Detected	5.514				SD of Detected		0.539
193					Minimum Non-Detect	3.4				Minimum Non-Detect		1.224
194					Maximum Non-Detect	70				Maximum Non-Detect		4.248
195												
196	Note: Data have multiple DLs - Use of KM Method is recommended						Number treated as Non-Detect					
197	For all methods (except KM, DL/2, and ROS Methods),						Number treated as Detected					
198	Observations < Largest ND are treated as NDs						Single DL Non-Detect Percentage					
199												
200	<b>Warning: There are only 4 Distinct Detected Values in this data</b>											
201	Note: It should be noted that even though bootstrap may be performed on this data set											
202	the resulting calculations may not be reliable enough to draw conclusions											
203												
204	It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.											
205												
206												
207	<b>UCL Statistics</b>											
208	<b>Normal Distribution Test with Detected Values Only</b>						<b>Lognormal Distribution Test with Detected Values Only</b>					



	A	B	C	D	E	F	G	H	I	J	K	L								
261																				
262	<b>General Statistics</b>																			
263	Number of Valid Data			55	Number of Detected Data			0												
264	Number of Distinct Detected Data			0	Number of Non-Detect Data			55												
265					Percent Non-Detects			100.00%												
266	<b>Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!</b>																			
267	<b>Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!</b>																			
268	<b>The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</b>																			
270	<b>The data set for variable 2,4-Dinitrotoluene was not processed!</b>																			
271																				
272																				
273																				
274																				
275	<b>2-Methylphenol</b>																			
276																				
277	<b>General Statistics</b>																			
278	Number of Valid Data			55	Number of Detected Data			2												
279	Number of Distinct Detected Data			2	Number of Non-Detect Data			53												
280					Percent Non-Detects			96.36%												
281																				
282	<b>Raw Statistics</b>				<b>Log-transformed Statistics</b>															
283	Minimum Detected			3.9	Minimum Detected			1.361												
284	Maximum Detected			6.1	Maximum Detected			1.808												
285	Mean of Detected			5	Mean of Detected			1.585												
286	SD of Detected			1.556	SD of Detected			0.316												
287	Minimum Non-Detect			1.8	Minimum Non-Detect			0.588												
288	Maximum Non-Detect			36	Maximum Non-Detect			3.584												
289																				
290	Note: Data have multiple DLs - Use of KM Method is recommended				Number treated as Non-Detect				55											
291	For all methods (except KM, DL/2, and ROS Methods),				Number treated as Detected				0											
292	Observations < Largest ND are treated as NDs				Single DL Non-Detect Percentage				100.00%											
293																				
294	<b>Warning: Data set has only 2 Distinct Detected Values.</b>																			
295	<b>This may not be adequate enough to compute meaningful and reliable test statistics and estimates.</b>																			
296	<b>The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).</b>																			
297																				
298	<b>Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.</b>																			
299																				
300	<b>The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.</b>																			
301	<b>Those methods will return a 'N/A' value on your output display!</b>																			
302																				
303	<b>It is necessary to have 4 or more Distinct Values for bootstrap methods.</b>																			
304	<b>However, results obtained using 4 to 9 distinct values may not be reliable.</b>																			
305	<b>It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.</b>																			
306																				
307																				
308	<b>UCL Statistics</b>																			
309	<b>Normal Distribution Test with Detected Values Only</b>				<b>Lognormal Distribution Test with Detected Values Only</b>															
310	Shapiro Wilk Test Statistic			N/A	Shapiro Wilk Test Statistic			N/A												
311	5% Shapiro Wilk Critical Value			N/A	5% Shapiro Wilk Critical Value			N/A												
312	<b>Data not Normal at 5% Significance Level</b>				<b>Data not Lognormal at 5% Significance Level</b>															



	A	B	C	D	E	F	G	H	I	J	K	L								
365	Number of Distinct Detected Data					7	Number of Non-Detect Data					48								
366							Percent Non-Detects					87.27%								
367																				
368	<b>Raw Statistics</b>					<b>Log-transformed Statistics</b>														
369	Minimum Detected			0.44				Minimum Detected			-0.821									
370	Maximum Detected			14				Maximum Detected			2.639									
371	Mean of Detected			5.096				Mean of Detected			0.805									
372	SD of Detected			5.534				SD of Detected			1.541									
373	Minimum Non-Detect			0.38				Minimum Non-Detect			-0.968									
374	Maximum Non-Detect			3.9				Maximum Non-Detect			1.361									
375																				
376	Note: Data have multiple DLs - Use of KM Method is recommended					Number treated as Non-Detect					52									
377	For all methods (except KM, DL/2, and ROS Methods),					Number treated as Detected					3									
378	Observations < Largest ND are treated as NDs					Single DL Non-Detect Percentage					94.55%									
379																				
380	<b>Warning: There are only 7 Detected Values in this data</b>																			
381	Note: It should be noted that even though bootstrap may be performed on this data set																			
382	the resulting calculations may not be reliable enough to draw conclusions																			
383																				
384	It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.																			
385																				
386																				
387	<b>UCL Statistics</b>																			
388	<b>Normal Distribution Test with Detected Values Only</b>					<b>Lognormal Distribution Test with Detected Values Only</b>														
389	Shapiro Wilk Test Statistic			0.827				Shapiro Wilk Test Statistic			0.833									
390	5% Shapiro Wilk Critical Value			0.803				5% Shapiro Wilk Critical Value			0.803									
391	<b>Data appear Normal at 5% Significance Level</b>					<b>Data appear Lognormal at 5% Significance Level</b>														
392																				
393	<b>Assuming Normal Distribution</b>					<b>Assuming Lognormal Distribution</b>														
394	DL/2 Substitution Method							DL/2 Substitution Method												
395	Mean			0.853				Mean			-1.269									
396	SD			2.476				SD			0.999									
397	95% DL/2 (t) UCL			1.412				95% H-Stat (DL/2) UCL			0.635									
398																				
399	Maximum Likelihood Estimate(MLE) Method			N/A				Log ROS Method												
400	<b>MLE yields a negative mean</b>					<b>Mean in Log Scale</b>														
401																				
402						SD in Log Scale														
403						Mean in Original Scale														
404						SD in Original Scale														
405						95% t UCL														
406						95% Percentile Bootstrap UCL														
407						95% BCA Bootstrap UCL														
408						95% H-UCL														
409	<b>Gamma Distribution Test with Detected Values Only</b>					<b>Data Distribution Test with Detected Values Only</b>														
410	k star (bias corrected)			0.512				<b>Data appear Normal at 5% Significance Level</b>												
411																				
412	Theta Star			9.951																
413																				
414	nu star			7.169				<b>Nonparametric Statistics</b>												
415																				
416	A-D Test Statistic			0.595				Kaplan-Meier (KM) Method												
416	5% A-D Critical Value			0.737				Mean			1.033									
416	K-S Test Statistic			0.737																

	A	B	C	D	E	F	G	H	I	J	K	L
417					5% K-S Critical Value	0.323					SD	2.398
418					Data appear Gamma Distributed at 5% Significance Level					SE of Mean		0.349
419										95% KM (t) UCL		1.618
420					Assuming Gamma Distribution					95% KM (z) UCL		1.608
421					Gamma ROS Statistics using Extrapolated Data					95% KM (jackknife) UCL		1.543
422					Minimum	0.000001				95% KM (bootstrap t) UCL		1.934
423					Maximum	14				95% KM (BCA) UCL		2.785
424					Mean	0.649				95% KM (Percentile Bootstrap) UCL		2.216
425					Median	0.000001				95% KM (Chebyshev) UCL		2.556
426					SD	2.518				97.5% KM (Chebyshev) UCL		3.214
427					k star	0.0813				99% KM (Chebyshev) UCL		4.508
428					Theta star	7.981						
429					Nu star	8.939				Potential UCLs to Use		
430					AppChi2	3.29				95% KM (t) UCL		1.618
431					95% Gamma Approximate UCL (Use when n >= 40)	1.762				95% KM (Percentile Bootstrap) UCL		2.216
432					95% Adjusted Gamma UCL (Use when n < 40)	1.813						
433	Note: DL/2 is not a recommended method.											
434												
435	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
436	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
437	For additional insight, the user may want to consult a statistician.											
438												
439												
440	Acenaphthene											
441												
442	General Statistics											
443					Number of Valid Data	55				Number of Detected Data		15
444					Number of Distinct Detected Data	14				Number of Non-Detect Data		40
445										Percent Non-Detects		72.73%
446												
447	Raw Statistics						Log-transformed Statistics					
448					Minimum Detected	0.2				Minimum Detected		-1.609
449					Maximum Detected	3.9				Maximum Detected		1.361
450					Mean of Detected	0.901				Mean of Detected		-0.543
451					SD of Detected	1.137				SD of Detected		0.851
452					Minimum Non-Detect	0.16				Minimum Non-Detect		-1.833
453					Maximum Non-Detect	3.2				Maximum Non-Detect		1.163
454												
455	Note: Data have multiple DLs - Use of KM Method is recommended						Number treated as Non-Detect					
456	For all methods (except KM, DL/2, and ROS Methods),						Number treated as Detected					
457	Observations < Largest ND are treated as NDs						Single DL Non-Detect Percentage					
458												
459	UCL Statistics											
460	Normal Distribution Test with Detected Values Only						Lognormal Distribution Test with Detected Values Only					
461										Shapiro Wilk Test Statistic		0.852
462										5% Shapiro Wilk Critical Value		0.881
463	Data not Normal at 5% Significance Level						Data not Lognormal at 5% Significance Level					
464												
465	Assuming Normal Distribution						Assuming Lognormal Distribution					
466										DL/2 Substitution Method		
467										Mean		-1.876
468										SD		1.055



	A	B	C	D	E	F	G	H	I	J	K	L
521												
522					The data set for variable Acetone was not processed!							
523												
524												
525												
526	Anthracene											
527												
528					General Statistics							
529				Number of Valid Data	55			Number of Detected Data	9			
530				Number of Distinct Detected Data	9			Number of Non-Detect Data	46			
531								Percent Non-Detects	83.64%			
532												
533				Raw Statistics				Log-transformed Statistics				
534				Minimum Detected	0.18			Minimum Detected	-1.715			
535				Maximum Detected	8.5			Maximum Detected	2.14			
536				Mean of Detected	1.553			Mean of Detected	-0.486			
537				SD of Detected	2.693			SD of Detected	1.327			
538				Minimum Non-Detect	0.18			Minimum Non-Detect	-1.715			
539				Maximum Non-Detect	3.6			Maximum Non-Detect	1.281			
540												
541	Note: Data have multiple DLs - Use of KM Method is recommended							Number treated as Non-Detect	54			
542	For all methods (except KM, DL/2, and ROS Methods),							Number treated as Detected	1			
543	Observations < Largest ND are treated as NDs							Single DL Non-Detect Percentage	98.18%			
544												
545				Warning: There are only 9 Detected Values in this data								
546				Note: It should be noted that even though bootstrap may be performed on this data set								
547				the resulting calculations may not be reliable enough to draw conclusions								
548												
549				It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.								
550												
551												
552				UCL Statistics								
553				Normal Distribution Test with Detected Values Only				Lognormal Distribution Test with Detected Values Only				
554				Shapiro Wilk Test Statistic	0.578			Shapiro Wilk Test Statistic	0.863			
555				5% Shapiro Wilk Critical Value	0.829			5% Shapiro Wilk Critical Value	0.829			
556				Data not Normal at 5% Significance Level				Data appear Lognormal at 5% Significance Level				
557												
558				Assuming Normal Distribution				Assuming Lognormal Distribution				
559				DL/2 Substitution Method				DL/2 Substitution Method				
560				Mean	0.376			Mean	-1.984			
561				SD	1.189			SD	0.979			
562				95% DL/2 (t) UCL	0.645			95% H-Stat (DL/2) UCL	0.302			
563												
564				Maximum Likelihood Estimate(MLE) Method	N/A			Log ROS Method				
565				MLE method failed to converge properly				Mean in Log Scale	-4.842			
566								SD in Log Scale	2.771			
567								Mean in Original Scale	0.266			
568								SD in Original Scale	1.185			
569								95% t UCL	0.534			
570								95% Percentile Bootstrap UCL	0.566			
571								95% BCA Bootstrap UCL	0.761			
572								95% H-UCL	2.373			

	A	B	C	D	E	F	G	H	I	J	K	L	
573													
574	<b>Gamma Distribution Test with Detected Values Only</b>						<b>Data Distribution Test with Detected Values Only</b>						
575	k star (bias corrected)						Data appear Lognormal at 5% Significance Level						
576	Theta Star												
577	nu star												
578													
579	A-D Test Statistic						0.883	<b>Nonparametric Statistics</b>					
580	5% A-D Critical Value						0.759	Kaplan-Meier (KM) Method					
581	K-S Test Statistic						0.759	Mean					
582	5% K-S Critical Value						0.291	SD					
583	<b>Data not Gamma Distributed at 5% Significance Level</b>							SE of Mean					
584								95% KM (t) UCL					
585	<b>Assuming Gamma Distribution</b>							95% KM (z) UCL					
586	Gamma ROS Statistics using Extrapolated Data							95% KM (jackknife) UCL					
587	Minimum						0.000001	95% KM (bootstrap t) UCL					
588	Maximum						8.5	95% KM (BCA) UCL					
589	Mean						0.254	95% KM (Percentile Bootstrap) UCL					
590	Median						0.000001	95% KM (Chebyshev) UCL					
591	SD						1.188	97.5% KM (Chebyshev) UCL					
592	k star						0.0888	99% KM (Chebyshev) UCL					
593	Theta star						2.861						
594	<b>Potential UCLs to Use</b>												
595	AppChi2						3.799	95% KM (BCA) UCL					
596	95% Gamma Approximate UCL (Use when n >= 40)						0.654						
597	95% Adjusted Gamma UCL (Use when n < 40)						0.671						
598	<b>Note: DL/2 is not a recommended method.</b>												
599													
600	<b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>												
601	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).												
602	For additional insight, the user may want to consult a statistician.												
603													
604													
605	<b>Antimony</b>												
606													
607	<b>General Statistics</b>												
608	Number of Valid Data						55	Number of Detected Data					
609	Number of Distinct Detected Data						0	Number of Non-Detect Data					
610								Percent Non-Detects					
611													
612	<b>Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!</b>												
613	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!												
614	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).												
615													
616	<b>The data set for variable Antimony was not processed!</b>												
617													
618													
619													
620	<b>Arsenic</b>												
621													
622	<b>General Statistics</b>												
623	Number of Valid Data						55	Number of Detected Data					
624	Number of Distinct Detected Data						22	Number of Non-Detect Data					

	A	B	C	D	E	F	G	H	I	J	K	L
625											Percent Non-Detects	50.91%
626												
627	<b>Raw Statistics</b>						<b>Log-transformed Statistics</b>					
628	Minimum Detected		4.1				Minimum Detected		1.411			
629	Maximum Detected		26				Maximum Detected		3.258			
630	Mean of Detected		12.69				Mean of Detected		2.401			
631	SD of Detected		6.68				SD of Detected		0.547			
632	Minimum Non-Detect		4				Minimum Non-Detect		1.386			
633	Maximum Non-Detect		4				Maximum Non-Detect		1.386			
634												
635												
636	<b>UCL Statistics</b>											
637	<b>Normal Distribution Test with Detected Values Only</b>						<b>Lognormal Distribution Test with Detected Values Only</b>					
638	Shapiro Wilk Test Statistic		0.905				Shapiro Wilk Test Statistic		0.935			
639	5% Shapiro Wilk Critical Value		0.923				5% Shapiro Wilk Critical Value		0.923			
640	<b>Data not Normal at 5% Significance Level</b>						<b>Data appear Lognormal at 5% Significance Level</b>					
641												
642	<b>Assuming Normal Distribution</b>						<b>Assuming Lognormal Distribution</b>					
643	DL/2 Substitution Method						DL/2 Substitution Method					
644	Mean		7.249				Mean		1.532			
645	SD		7.112				SD		0.942			
646	95% DL/2 (t) UCL		8.854				95% H-Stat (DL/2) UCL		9.631			
647												
648	Maximum Likelihood Estimate(MLE) Method						Log ROS Method					
649	Mean		3.762				Mean in Log Scale		1.643			
650	SD		10.98				SD in Log Scale		0.923			
651	95% MLE (t) UCL		6.24				Mean in Original Scale		7.661			
652	95% MLE (Tiku) UCL		6.845				SD in Original Scale		6.867			
653							95% t UCL		9.21			
654							95% Percentile Bootstrap UCL		9.246			
655							95% BCA Bootstrap UCL		9.431			
656							95% H UCL		10.49			
657												
658	<b>Gamma Distribution Test with Detected Values Only</b>						<b>Data Distribution Test with Detected Values Only</b>					
659	k star (bias corrected)		3.349				<b>Data Follow Appr. Gamma Distribution at 5% Significance Level</b>					
660	Theta Star		3.79									
661	nu star		180.8									
662												
663	A-D Test Statistic		0.713				<b>Nonparametric Statistics</b>					
664	5% A-D Critical Value		0.75				Kaplan-Meier (KM) Method					
665	K-S Test Statistic		0.75				Mean		8.318			
666	5% K-S Critical Value		0.169				SD		6.289			
667	<b>Data follow Appr. Gamma Distribution at 5% Significance Level</b>						SE of Mean					
668							95% KM (t) UCL		9.764			
669	<b>Assuming Gamma Distribution</b>						95% KM (z) UCL		9.74			
670	Gamma ROS Statistics using Extrapolated Data						95% KM (jackknife) UCL		9.559			
671	Minimum		0.000001				95% KM (bootstrap t) UCL		9.813			
672	Maximum		26				95% KM (BCA) UCL		10.48			
673	Mean		6.231				95% KM (Percentile Bootstrap) UCL		10.18			
674	Median		0.000001				95% KM (Chebyshev) UCL		12.08			
675	SD		7.905				97.5% KM (Chebyshev) UCL		13.71			
676	k star		0.111				99% KM (Chebyshev) UCL		16.92			

	A	B	C	D	E	F	G	H	I	J	K	L	
677					Theta star	55.92							
678					Nu star	12.26						Potential UCLs to Use	
679					AppChi2	5.397					95% KM (t) UCL	9.764	
680					95% Gamma Approximate UCL (Use when n >= 40)	14.15							
681					95% Adjusted Gamma UCL (Use when n < 40)	14.48							
682	<b>Note: DL/2 is not a recommended method.</b>												
683													
684	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
685	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).												
686	For additional insight, the user may want to consult a statistician.												
687													
688													
689	Barium												
690													
691	<b>General Statistics</b>												
692	Number of Valid Observations			55			Number of Distinct Observations			43			
693													
694	<b>Raw Statistics</b>				<b>Log-transformed Statistics</b>								
695	Minimum			12			Minimum of Log Data			2.485			
696	Maximum			1300			Maximum of Log Data			7.17			
697	Mean			335.9			Mean of log Data			5.423			
698	Geometric Mean			226.6			SD of log Data			1.045			
699	Median			300									
700	SD			262.7									
701	Std. Error of Mean			35.42									
702	Coefficient of Variation			0.782									
703	Skewness			1.286									
704													
705	<b>Relevant UCL Statistics</b>												
706	<b>Normal Distribution Test</b>					<b>Lognormal Distribution Test</b>							
707	Lilliefors Test Statistic			0.112			Lilliefors Test Statistic			0.148			
708	Lilliefors Critical Value			0.119			Lilliefors Critical Value			0.119			
709	Data appear Normal at 5% Significance Level					Data not Lognormal at 5% Significance Level							
710													
711	<b>Assuming Normal Distribution</b>					<b>Assuming Lognormal Distribution</b>							
712	95% Student's-t UCL			395.2			95% H-UCL			549.4			
713	95% UCLs (Adjusted for Skewness)					95% Chebyshev (MVUE) UCL							
714	95% Adjusted-CLT UCL (Chen-1995)			400.7			97.5% Chebyshev (MVUE) UCL			790.7			
715	95% Modified-t UCL (Johnson-1978)			396.2			99% Chebyshev (MVUE) UCL			1031			
716													
717	<b>Gamma Distribution Test</b>					<b>Data Distribution</b>							
718	k star (bias corrected)			1.349			Data appear Normal at 5% Significance Level						
719	Theta Star			249.1									
720	MLE of Mean			335.9									
721	MLE of Standard Deviation			289.3									
722	nu star			148.4									
723	Approximate Chi Square Value (.05)			121.2			<b>Nonparametric Statistics</b>						
724	Adjusted Level of Significance			0.0456			95% CLT UCL			394.2			
725	Adjusted Chi Square Value			120.5			95% Jackknife UCL			395.2			
726							95% Standard Bootstrap UCL			395.4			
727	Anderson-Darling Test Statistic			0.325			95% Bootstrap-t UCL			400.2			
728	Anderson-Darling 5% Critical Value			0.77			95% Hall's Bootstrap UCL			409.4			

	A	B	C	D	E	F	G	H	I	J	K	L
729					Kolmogorov-Smirnov Test Statistic	0.0967			95% Percentile Bootstrap UCL			394.3
730					Kolmogorov-Smirnov 5% Critical Value	0.122			95% BCA Bootstrap UCL			401.2
731					Data appear Gamma Distributed at 5% Significance Level				95% Chebyshev(Mean, Sd) UCL			490.3
732									97.5% Chebyshev(Mean, Sd) UCL			557.1
733					Assuming Gamma Distribution				99% Chebyshev(Mean, Sd) UCL			688.3
734					95% Approximate Gamma UCL (Use when n >= 40)	411.2						
735					95% Adjusted Gamma UCL (Use when n < 40)	413.4						
736												
737					Potential UCL to Use				Use 95% Student's-t UCL			395.2
738												
739					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
740					These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)							
741					and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.							
742												
743												
744					Benzene							
745												
746					General Statistics							
747					Number of Valid Data	93			Number of Detected Data			31
748					Number of Distinct Detected Data	29			Number of Non-Detect Data			62
749									Percent Non-Detects			66.67%
750												
751					Raw Statistics				Log-transformed Statistics			
752					Minimum Detected	0.43			Minimum Detected			-0.844
753					Maximum Detected	190000			Maximum Detected			12.15
754					Mean of Detected	9255			Mean of Detected			3.797
755					SD of Detected	34469			SD of Detected			3.855
756					Minimum Non-Detect	0.34			Minimum Non-Detect			-1.079
757					Maximum Non-Detect	0.4			Maximum Non-Detect			-0.916
758												
759					Note: Data have multiple DLs - Use of KM Method is recommended				Number treated as Non-Detect			62
760					For all methods (except KM, DL/2, and ROS Methods),				Number treated as Detected			31
761					Observations < Largest ND are treated as NDs				Single DL Non-Detect Percentage			66.67%
762												
763					UCL Statistics							
764					Normal Distribution Test with Detected Values Only				Lognormal Distribution Test with Detected Values Only			
765					Shapiro Wilk Test Statistic	0.299			Shapiro Wilk Test Statistic			0.898
766					5% Shapiro Wilk Critical Value	0.929			5% Shapiro Wilk Critical Value			0.929
767					Data not Normal at 5% Significance Level				Data not Lognormal at 5% Significance Level			
768												
769					Assuming Normal Distribution				Assuming Lognormal Distribution			
770					DL/2 Substitution Method				DL/2 Substitution Method			
771					Mean	3085			Mean			0.109
772					SD	20166			SD			3.424
773					95% DL/2 (t) UCL	6560			95% H-Stat (DL/2) UCL			2620
774												
775					Maximum Likelihood Estimate(MLE) Method	N/A			Log ROS Method			
776					MLE yields a negative mean				Mean in Log Scale			-4.6
777									SD in Log Scale			7.55
778									Mean in Original Scale			3085
779									SD in Original Scale			20166
780									95% t UCL			6560







	A	B	C	D	E	F	G	H	I	J	K	L									
937											95% H-UCL	N/A									
938																					
939	<b>Gamma Distribution Test with Detected Values Only</b>					<b>Data Distribution Test with Detected Values Only</b>															
940	k star (bias corrected)			N/A		<b>Data do not follow a Discernable Distribution (0.05)</b>															
941	Theta Star			N/A																	
942	nu star			N/A																	
943																					
944	A-D Test Statistic			N/A		<b>Nonparametric Statistics</b>															
945	5% A-D Critical Value			N/A		Kaplan-Meier (KM) Method															
946	K-S Test Statistic			N/A		Mean															
947	5% K-S Critical Value			N/A		SD															
948	<b>Data not Gamma Distributed at 5% Significance Level</b>					SE of Mean															
949						95% KM (t) UCL															
950	<b>Assuming Gamma Distribution</b>					95% KM (z) UCL															
951	Gamma ROS Statistics using Extrapolated Data					95% KM (jackknife) UCL															
952	Minimum					95% KM (bootstrap t) UCL															
953	Maximum					95% KM (BCA) UCL															
954	Mean					95% KM (Percentile Bootstrap) UCL															
955	Median					95% KM (Chebyshev) UCL															
956	SD					97.5% KM (Chebyshev) UCL															
957	k star					99% KM (Chebyshev) UCL															
958	Theta star																				
959	Nu star					<b>Potential UCLs to Use</b>															
960	AppChi2					95% KM (t) UCL															
961	95% Gamma Approximate UCL (Use when n >= 40)					95% KM (% Bootstrap) UCL															
962	95% Adjusted Gamma UCL (Use when n < 40)																				
963	<b>Note: DL/2 is not a recommended method.</b>																				
964																					
965	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.																				
966	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).																				
967	For additional insight, the user may want to consult a statistician.																				
968																					
969																					
970	<b>Carbon disulfide</b>																				
971																					
972	<b>General Statistics</b>																				
973	Number of Valid Data			55		Number of Detected Data															
974	Number of Distinct Detected Data			0		Number of Non-Detect Data															
975						Percent Non-Detects															
976																					
977	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!																				
978	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!																				
979	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).																				
980																					
981	The data set for variable Carbon disulfide was not processed!																				
982																					
983																					
984																					
985	<b>Chlorobenzene</b>																				
986																					
987	<b>General Statistics</b>																				
988	Number of Valid Data			55		Number of Detected Data															

	A	B	C	D	E	F	G	H	I	J	K	L											
989	Number of Distinct Detected Data				8	Number of Non-Detect Data				47													
990						Percent Non-Detects				85.45%													
991																							
992	<b>Raw Statistics</b>				<b>Log-transformed Statistics</b>																		
993	Minimum Detected				1.5	Minimum Detected				0.405													
994	Maximum Detected				18	Maximum Detected				2.89													
995	Mean of Detected				8.6	Mean of Detected				1.875													
996	SD of Detected				6.285	SD of Detected				0.847													
997	Minimum Non-Detect				0.5	Minimum Non-Detect				-0.693													
998	Maximum Non-Detect				1300	Maximum Non-Detect				7.17													
999																							
1000	Note: Data have multiple DLs - Use of KM Method is recommended				Number treated as Non-Detect				55														
1001	For all methods (except KM, DL/2, and ROS Methods),				Number treated as Detected				0														
1002	Observations < Largest ND are treated as NDs				Single DL Non-Detect Percentage				100.00%														
1003																							
1004	<b>Warning: There are only 8 Detected Values in this data</b>																						
1005	<b>Note: It should be noted that even though bootstrap may be performed on this data set</b>																						
1006	<b>the resulting calculations may not be reliable enough to draw conclusions</b>																						
1007																							
1008	<b>It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.</b>																						
1009																							
1010																							
1011	<b>UCL Statistics</b>																						
1012	<b>Normal Distribution Test with Detected Values Only</b>				<b>Lognormal Distribution Test with Detected Values Only</b>																		
1013	Shapiro Wilk Test Statistic				0.883	Shapiro Wilk Test Statistic				0.948													
1014	5% Shapiro Wilk Critical Value				0.818	5% Shapiro Wilk Critical Value				0.818													
1015	<b>Data appear Normal at 5% Significance Level</b>				<b>Data appear Lognormal at 5% Significance Level</b>																		
1016																							
1017	<b>Assuming Normal Distribution</b>				<b>Assuming Lognormal Distribution</b>																		
1018	DL/2 Substitution Method					DL/2 Substitution Method																	
1019	Mean				15.79	Mean				-0.249													
1020	SD				87.7	SD				1.897													
1021	95% DL/2 (t) UCL				35.58	95% H-Stat (DL/2) UCL				11.78													
1022																							
1023	Maximum Likelihood Estimate(MLE) Method				N/A	Log ROS Method																	
1024	<b>MLE method failed to converge properly</b>					Mean in Log Scale				-1.054													
1025						SD in Log Scale				1.785													
1026						Mean in Original Scale				1.615													
1027						SD in Original Scale				3.71													
1028						95% t UCL				2.452													
1029						95% Percentile Bootstrap UCL				2.489													
1030						95% BCA Bootstrap UCL				2.692													
1031						95% H-UCL				3.91													
1032																							
1033	<b>Gamma Distribution Test with Detected Values Only</b>				<b>Data Distribution Test with Detected Values Only</b>																		
1034	k star (bias corrected)				1.305	<b>Data appear Normal at 5% Significance Level</b>																	
1035	Theta Star				6.588																		
1036	nu star				20.89																		
1037																							
1038	A-D Test Statistic				0.272	<b>Nonparametric Statistics</b>																	
1039	5% A-D Critical Value				0.724	Kaplan-Meier (KM) Method																	
1040	K-S Test Statistic				0.724	Mean				2.65													

	A	B	C	D	E	F	G	H	I	J	K	L
1041				5% K-S Critical Value		0.298					SD	3.51
1042				Data appear Gamma Distributed at 5% Significance Level						SE of Mean		0.532
1043										95% KM (t) UCL		3.539
1044				Assuming Gamma Distribution						95% KM (z) UCL		3.524
1045				Gamma ROS Statistics using Extrapolated Data					95% KM (jackknife) UCL			3.989
1046				Minimum	0.000001				95% KM (bootstrap t) UCL			3.877
1047				Maximum	18				95% KM (BCA) UCL			6.096
1048				Mean	1.251			95% KM (Percentile Bootstrap) UCL				5.716
1049				Median	0.000001			95% KM (Chebyshev) UCL				4.967
1050				SD	3.806			97.5% KM (Chebyshev) UCL				5.97
1051				k star	0.08			99% KM (Chebyshev) UCL				7.939
1052				Theta star	15.63							
1053				Nu star	8.801			Potential UCLs to Use				
1054				AppChi2	3.207			95% KM (t) UCL				3.539
1055				95% Gamma Approximate UCL (Use when n >= 40)	3.433			95% KM (Percentile Bootstrap) UCL				5.716
1056				95% Adjusted Gamma UCL (Use when n < 40)	3.532							
1057	Note: DL/2 is not a recommended method.											
1058												
1059	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1060	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
1061	For additional insight, the user may want to consult a statistician.											
1062												
1063												
1064	Chloroform											
1065												
1066	General Statistics											
1067				Number of Valid Data	55			Number of Detected Data				0
1068				Number of Distinct Detected Data	0			Number of Non-Detect Data				55
1069								Percent Non-Detects				100.00%
1070												
1071	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1072	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1073	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1074												
1075	The data set for variable Chloroform was not processed!											
1076												
1077												
1078												
1079	Chromium											
1080												
1081	General Statistics											
1082				Number of Valid Data	55			Number of Detected Data				8
1083				Number of Distinct Detected Data	8			Number of Non-Detect Data				47
1084								Percent Non-Detects				85.45%
1085												
1086	Raw Statistics						Log-transformed Statistics					
1087				Minimum Detected	2.5			Minimum Detected				0.916
1088				Maximum Detected	1800			Maximum Detected				7.496
1089				Mean of Detected	234.9			Mean of Detected				2.757
1090				SD of Detected	632.4			SD of Detected				2.122
1091				Minimum Non-Detect	2			Minimum Non-Detect				0.693
1092				Maximum Non-Detect	10			Maximum Non-Detect				2.303

	A	B	C	D	E	F	G	H	I	J	K	L
1093												
1094	Note: Data have multiple DLs - Use of KM Method is recommended											50
1095	For all methods (except KM, DL/2, and ROS Methods),											5
1096	Observations < Largest ND are treated as NDs											90.91%
1097												
1098	<b>Warning: There are only 8 Detected Values in this data</b>											
1099	Note: It should be noted that even though bootstrap may be performed on this data set											
1100	the resulting calculations may not be reliable enough to draw conclusions											
1101												
1102	<b>It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.</b>											
1103												
1104												
1105	<b>UCL Statistics</b>											
1106	<b>Normal Distribution Test with Detected Values Only</b>				<b>Lognormal Distribution Test with Detected Values Only</b>							
1107	Shapiro Wilk Test Statistic				0.43				Shapiro Wilk Test Statistic			
1108	5% Shapiro Wilk Critical Value				0.818				5% Shapiro Wilk Critical Value			
1109	<b>Data not Normal at 5% Significance Level</b>				<b>Data not Lognormal at 5% Significance Level</b>							
1110												
1111	<b>Assuming Normal Distribution</b>				<b>Assuming Lognormal Distribution</b>							
1112	DL/2 Substitution Method				DL/2 Substitution Method							
1113	Mean				35.1				Mean			
1114	SD				242.4				SD			
1115	95% DL/2 (t) UCL				89.81				95% H-Stat (DL/2) UCL			
1116												
1117	Maximum Likelihood Estimate(MLE) Method				N/A				Log ROS Method			
1118	<b>MLE yields a negative mean</b>				<b>Mean in Log Scale</b>							
1119												5.104
1120												34.22
1121												242.6
1122												88.96
1123												99.56
1124												133.8
1125												739762
1126												
1127	<b>Gamma Distribution Test with Detected Values Only</b>				<b>Data Distribution Test with Detected Values Only</b>							
1128	k star (bias corrected)				0.246				<b>Data do not follow a Discernable Distribution (0.05)</b>			
1129	Theta Star				953.2							
1130	nu star				3.944							
1131												
1132	A-D Test Statistic				1.554				<b>Nonparametric Statistics</b>			
1133	5% A-D Critical Value				0.812				Kaplan-Meier (KM) Method			
1134	K-S Test Statistic				0.812				Mean			
1135	5% K-S Critical Value				0.319				SD			
1136	<b>Data not Gamma Distributed at 5% Significance Level</b>				<b>SE of Mean</b>							
1137												94.22
1138	<b>Assuming Gamma Distribution</b>				<b>95% KM (z) UCL</b>							
1139	Gamma ROS Statistics using Extrapolated Data								95% KM (jackknife) UCL			
1140	Minimum				0.000001				95% KM (bootstrap t) UCL			
1141	Maximum				1800				95% KM (BCA) UCL			
1142	Mean				34.17				95% KM (Percentile Bootstrap) UCL			
1143	Median				0.000001				95% KM (Chebyshev) UCL			
1144	SD				242.6				97.5% KM (Chebyshev) UCL			



	A	B	C	D	E	F	G	H	I	J	K	L
1197				k star (bias corrected)		6.454						Data appear Gamma Distributed at 5% Significance Level
1198				Theta Star		1.73						
1199				nu star		219.4						
1200												
1201				A-D Test Statistic		0.467						Nonparametric Statistics
1202				5% A-D Critical Value		0.74						Kaplan-Meier (KM) Method
1203				K-S Test Statistic		0.74						Mean
1204				5% K-S Critical Value		0.209						SD
1205				Data appear Gamma Distributed at 5% Significance Level								SE of Mean
1206												95% KM (t) UCL
1207				Assuming Gamma Distribution								95% KM (z) UCL
1208				Gamma ROS Statistics using Extrapolated Data								95% KM (jackknife) UCL
1209				Minimum		0.000001						95% KM (bootstrap t) UCL
1210				Maximum		24						95% KM (BCA) UCL
1211				Mean		3.542						95% KM (Percentile Bootstrap) UCL
1212				Median		0.000001						95% KM (Chebyshev) UCL
1213				SD		5.725						97.5% KM (Chebyshev) UCL
1214				k star		0.0958						99% KM (Chebyshev) UCL
1215				Theta star		36.96						
1216				Nu star		10.54						Potential UCLs to Use
1217				AppChi2		4.283						95% KM (t) UCL
1218				95% Gamma Approximate UCL (Use when n >= 40)		8.718						
1219				95% Adjusted Gamma UCL (Use when n < 40)		8.943						
1220				Note: DL/2 is not a recommended method.								
1221												
1222				Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
1223				These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).								
1224				For additional insight, the user may want to consult a statistician.								
1225												
1226												
1227				Chrysene								
1228												
1229				General Statistics								
1230				Number of Valid Data		55						Number of Detected Data
1231				Number of Distinct Detected Data		1						Number of Non-Detect Data
1232												Percent Non-Detects
1233												98.18%
1234				Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!								
1235				It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).								
1236												
1237				The data set for variable Chrysene was not processed!								
1238												
1239												
1240												
1241				Cobalt								
1242												
1243				General Statistics								
1244				Number of Valid Data		55						Number of Detected Data
1245				Number of Distinct Detected Data		8						Number of Non-Detect Data
1246												Percent Non-Detects
1247												85.45%
1248				Raw Statistics								Log-transformed Statistics

	A	B	C	D	E	F	G	H	I	J	K	L						
1249					Minimum Detected	3.7				Minimum Detected		1.308						
1250					Maximum Detected	19				Maximum Detected		2.944						
1251					Mean of Detected	9				Mean of Detected		2.016						
1252					SD of Detected	5.685				SD of Detected		0.647						
1253					Minimum Non-Detect	3				Minimum Non-Detect		1.099						
1254					Maximum Non-Detect	15				Maximum Non-Detect		2.708						
1255																		
1256	Note: Data have multiple DLs - Use of KM Method is recommended						Number treated as Non-Detect											
1257	For all methods (except KM, DL/2, and ROS Methods),						Number treated as Detected											
1258	Observations < Largest ND are treated as NDs						Single DL Non-Detect Percentage											
1259	<b>Warning: There are only 8 Detected Values in this data</b>																	
1260	<b>Note: It should be noted that even though bootstrap may be performed on this data set</b>																	
1261	<b>the resulting calculations may not be reliable enough to draw conclusions</b>																	
1262	<b>It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.</b>																	
1263																		
1264																		
1265																		
1266																		
1267	<b>UCL Statistics</b>																	
1268	<b>Normal Distribution Test with Detected Values Only</b>						<b>Lognormal Distribution Test with Detected Values Only</b>											
1269	Shapiro Wilk Test Statistic			0.874			Shapiro Wilk Test Statistic			0.882								
1270	5% Shapiro Wilk Critical Value			0.818			5% Shapiro Wilk Critical Value			0.818								
1271	<b>Data appear Normal at 5% Significance Level</b>						<b>Data appear Lognormal at 5% Significance Level</b>											
1272																		
1273	<b>Assuming Normal Distribution</b>						<b>Assuming Lognormal Distribution</b>											
1274	DL/2 Substitution Method						DL/2 Substitution Method											
1275	Mean			2.809			Mean			0.698								
1276	SD			3.48			SD			0.669								
1277	95% DL/2 (t) UCL			3.594			95% H-Stat (DL/2) UCL			3.018								
1278																		
1279	Maximum Likelihood Estimate(MLE) Method			N/A			Log ROS Method											
1280	<b>MLE method failed to converge properly</b>						Mean in Log Scale			-0.213								
1281							SD in Log Scale			1.395								
1282							Mean in Original Scale			2.077								
1283							SD in Original Scale			3.616								
1284							95% t UCL			2.893								
1285							95% Percentile Bootstrap UCL			2.907								
1286							95% BCA Bootstrap UCL			3.164								
1287							95% H-UCL			3.701								
1288																		
1289	<b>Gamma Distribution Test with Detected Values Only</b>						<b>Data Distribution Test with Detected Values Only</b>											
1290	k star (bias corrected)			1.909			<b>Data appear Normal at 5% Significance Level</b>											
1291	Theta Star			4.714														
1292	nu star			30.55														
1293																		
1294	A-D Test Statistic			0.501			<b>Nonparametric Statistics</b>											
1295	5% A-D Critical Value			0.722			Kaplan-Meier (KM) Method											
1296	K-S Test Statistic			0.722			Mean			4.49								
1297	5% K-S Critical Value			0.296			SD			2.78								
1298	<b>Data appear Gamma Distributed at 5% Significance Level</b>						SE of Mean			0.405								
1299							95% KM (t) UCL			5.167								
1300	<b>Assuming Gamma Distribution</b>						95% KM (z) UCL			5.155								

	A	B	C	D	E	F	G	H	I	J	K	L									
1301	Gamma ROS Statistics using Extrapolated Data					95% KM (jackknife) UCL				5.03											
1302					Minimum	0.000001	95% KM (bootstrap t) UCL				5.455										
1303					Maximum	19	95% KM (BCA) UCL				10.3										
1304					Mean	1.309	95% KM (Percentile Bootstrap) UCL				5.64										
1305					Median	0.000001	95% KM (Chebyshev) UCL				6.253										
1306					SD	3.801	97.5% KM (Chebyshev) UCL				7.016										
1307					k star	0.0799	99% KM (Chebyshev) UCL				8.515										
1308					Theta star	16.39															
1309					Nu star	8.787	<b>Potential UCLs to Use</b>														
1310					AppChi2	3.199	95% KM (t) UCL				5.167										
1311	95% Gamma Approximate UCL (Use when n >= 40)					3.596	95% KM (Percentile Bootstrap) UCL				5.64										
1312	95% Adjusted Gamma UCL (Use when n < 40)					3.701															
1313	<b>Note: DL/2 is not a recommended method.</b>																				
1314																					
1315	<b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>																				
1316	<b>These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).</b>																				
1317	<b>For additional insight, the user may want to consult a statistician.</b>																				
1318																					
1319																					
1320	<b>Copper</b>																				
1321																					
1322	<b>General Statistics</b>																				
1323	Number of Valid Data			55		Number of Detected Data				22											
1324	Number of Distinct Detected Data			20		Number of Non-Detect Data				33											
1325						Percent Non-Detects				60.00%											
1326																					
1327	<b>Raw Statistics</b>				<b>Log-transformed Statistics</b>																
1328	Minimum Detected			2		Minimum Detected				0.693											
1329	Maximum Detected			86		Maximum Detected				4.454											
1330	Mean of Detected			11.57		Mean of Detected				1.776											
1331	SD of Detected			18.95		SD of Detected				1.043											
1332	Minimum Non-Detect			2		Minimum Non-Detect				0.693											
1333	Maximum Non-Detect			2		Maximum Non-Detect				0.693											
1334																					
1335																					
1336	<b>UCL Statistics</b>																				
1337	<b>Normal Distribution Test with Detected Values Only</b>				<b>Lognormal Distribution Test with Detected Values Only</b>																
1338	Shapiro Wilk Test Statistic			0.541		Shapiro Wilk Test Statistic				0.867											
1339	5% Shapiro Wilk Critical Value			0.911		5% Shapiro Wilk Critical Value				0.911											
1340	<b>Data not Normal at 5% Significance Level</b>				<b>Data not Lognormal at 5% Significance Level</b>																
1341																					
1342	<b>Assuming Normal Distribution</b>				<b>Assuming Lognormal Distribution</b>																
1343	DL/2 Substitution Method							DL/2 Substitution Method													
1344	Mean			5.227		Mean				0.71											
1345	SD			12.92		SD				1.093											
1346	95% DL/2 (t) UCL			8.144		95% H-Stat (DL/2) UCL				5.322											
1347																					
1348	Maximum Likelihood Estimate(MLE) Method				N/A		Log ROS Method														
1349	<b>MLE yields a negative mean</b>								Mean in Log Scale			-0.158									
1350									SD in Log Scale			1.97									
1351									Mean in Original Scale			4.874									
1352									SD in Original Scale			13.05									



	A	B	C	D	E	F	G	H	I	J	K	L				
1405	<b>General Statistics</b>															
1406	Number of Valid Data				93	Number of Detected Data				27						
1407	Number of Distinct Detected Data				24	Number of Non-Detect Data				66						
1408						Percent Non-Detects				70.97%						
1409																
1410	<b>Raw Statistics</b>					<b>Log-transformed Statistics</b>										
1411	Minimum Detected				0.56	Minimum Detected				-0.58						
1412	Maximum Detected				14000	Maximum Detected				9.547						
1413	Mean of Detected				862	Mean of Detected				3.491						
1414	SD of Detected				2712	SD of Detected				3.012						
1415	Minimum Non-Detect				0.5	Minimum Non-Detect				-0.693						
1416	Maximum Non-Detect				1300	Maximum Non-Detect				7.17						
1417																
1418	Note: Data have multiple DLs - Use of KM Method is recommended					Number treated as Non-Detect				88						
1419	For all methods (except KM, DL/2, and ROS Methods),					Number treated as Detected				5						
1420	Observations < Largest ND are treated as NDs					Single DL Non-Detect Percentage				94.62%						
1421																
1422	<b>UCL Statistics</b>															
1423	<b>Normal Distribution Test with Detected Values Only</b>					<b>Lognormal Distribution Test with Detected Values Only</b>										
1424	Shapiro Wilk Test Statistic				0.347	Shapiro Wilk Test Statistic				0.929						
1425	5% Shapiro Wilk Critical Value				0.923	5% Shapiro Wilk Critical Value				0.923						
1426	<b>Data not Normal at 5% Significance Level</b>					<b>Data appear Lognormal at 5% Significance Level</b>										
1427																
1428	<b>Assuming Normal Distribution</b>					<b>Assuming Lognormal Distribution</b>										
1429	DL/2 Substitution Method					DL/2 Substitution Method										
1430	Mean				257.4	Mean				0.126						
1431	SD				1495	SD				2.812						
1432	95% DL/2 (t) UCL				515	95% H-Stat (DL/2) UCL				219.6						
1433																
1434	Maximum Likelihood Estimate(MLE) Method				N/A	Log ROS Method										
1435	<b>MLE yields a negative mean</b>					Mean in Log Scale				-3.474						
1436						SD in Log Scale				5.8						
1437						Mean in Original Scale				250.3						
1438						SD in Original Scale				1495						
1439						95% t UCL				507.8						
1440						95% Percentile Bootstrap UCL				539.6						
1441						95% BCA Bootstrap UCL				794.5						
1442						95% H-UCL				121300000						
1443																
1444	<b>Gamma Distribution Test with Detected Values Only</b>					<b>Data Distribution Test with Detected Values Only</b>										
1445	k star (bias corrected)				0.222	Data appear Lognormal at 5% Significance Level										
1446	Theta Star				3889											
1447	nu star				11.97											
1448																
1449	A-D Test Statistic				1.521	<b>Nonparametric Statistics</b>										
1450	5% A-D Critical Value				0.886	Kaplan-Meier (KM) Method										
1451	K-S Test Statistic				0.886	Mean				250.9						
1452	5% K-S Critical Value				0.186	SD				1486						
1453	<b>Data not Gamma Distributed at 5% Significance Level</b>					SE of Mean				157.1						
1454						95% KM (t) UCL				511.8						
1455	<b>Assuming Gamma Distribution</b>					95% KM (z) UCL				509.2						
1456	Gamma ROS Statistics using Extrapolated Data					95% KM (jackknife) UCL				508.3						



	A	B	C	D	E	F	G	H	I	J	K	L						
1509	<b>Normal Distribution Test with Detected Values Only</b>						<b>Lognormal Distribution Test with Detected Values Only</b>											
1510	Shapiro Wilk Test Statistic			N/A			Shapiro Wilk Test Statistic			N/A								
1511	5% Shapiro Wilk Critical Value			N/A			5% Shapiro Wilk Critical Value			N/A								
1512	<b>Data not Normal at 5% Significance Level</b>						<b>Data not Lognormal at 5% Significance Level</b>											
1513																		
1514	<b>Assuming Normal Distribution</b>						<b>Assuming Lognormal Distribution</b>											
1515	DL/2 Substitution Method						DL/2 Substitution Method											
1516	Mean			0.159			Mean			-2.221								
1517	SD			0.274			SD			0.616								
1518	95% DL/2 (t) UCL			0.221			95% H-Stat (DL/2) UCL			0.155								
1519																		
1520	Maximum Likelihood Estimate(MLE) Method			N/A			Log ROS Method											
1521	<b>MLE method failed to converge properly</b>						Mean in Log Scale			N/A								
1522							SD in Log Scale			N/A								
1523							Mean in Original Scale			N/A								
1524							SD in Original Scale			N/A								
1525							95% t UCL			N/A								
1526							95% Percentile Bootstrap UCL			N/A								
1527							95% BCA Bootstrap UCL			N/A								
1528							95% H-UCL			N/A								
1529																		
1530	<b>Gamma Distribution Test with Detected Values Only</b>						<b>Data Distribution Test with Detected Values Only</b>											
1531	k star (bias corrected)			N/A			<b>Data do not follow a Discernable Distribution (0.05)</b>											
1532																		
1533	Theta Star			N/A														
1534																		
1535	nu star			N/A			<b>Nonparametric Statistics</b>											
1536																		
1537	A-D Test Statistic			N/A			Kaplan-Meier (KM) Method											
1538	5% A-D Critical Value			N/A			Mean			0.526								
1539	K-S Test Statistic			N/A			SD			0.0435								
1540	<b>Data not Gamma Distributed at 5% Significance Level</b>						SE of Mean			0.00846								
1541							95% KM (t) UCL			0.54								
1542	<b>Assuming Gamma Distribution</b>						95% KM (z) UCL			0.54								
1543	Gamma ROS Statistics using Extrapolated Data						95% KM (jackknife) UCL			0.734								
1544																		
1545	Minimum			N/A			95% KM (bootstrap t) UCL			0.526								
1546																		
1547	Maximum			N/A			95% KM (BCA) UCL			0.84								
1548																		
1549	Mean			N/A			95% KM (Percentile Bootstrap) UCL			N/A								
1550																		
1551	Median			N/A			95% KM (Chebyshev) UCL			0.563								
1552							97.5% KM (Chebyshev) UCL			0.579								
1553																		
1554	SD			N/A			99% KM (Chebyshev) UCL			0.61								
1555																		
1556	k star			N/A			<b>Potential UCLs to Use</b>											
1557							95% KM (t) UCL			0.54								
1558							95% KM (% Bootstrap) UCL			N/A								
1559																		
1560	<b>Note: DL/2 is not a recommended method.</b>																	
1561																		
1562	<b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>																	
1563	<b>These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).</b>																	
1564	<b>For additional insight, the user may want to consult a statistician.</b>																	
1565																		

	A	B	C	D	E	F	G	H	I	J	K	L	
1561	Fluorene												
1562													
1563	<b>General Statistics</b>												
1564	Number of Valid Data		55				Number of Detected Data		26				
1565	Number of Distinct Detected Data		26				Number of Non-Detect Data		29				
1566							Percent Non-Detects		52.73%				
1567													
1568	<b>Raw Statistics</b>					<b>Log-transformed Statistics</b>							
1569	Minimum Detected		0.23				Minimum Detected		-1.47				
1570	Maximum Detected		83				Maximum Detected		4.419				
1571	Mean of Detected		9.287				Mean of Detected		1.405				
1572	SD of Detected		16.17				SD of Detected		1.382				
1573	Minimum Non-Detect		0.18				Minimum Non-Detect		-1.715				
1574	Maximum Non-Detect		1.8				Maximum Non-Detect		0.588				
1575													
1576	Note: Data have multiple DLs - Use of KM Method is recommended						Number treated as Non-Detect		34				
1577	For all methods (except KM, DL/2, and ROS Methods),						Number treated as Detected		21				
1578	Observations < Largest ND are treated as NDs						Single DL Non-Detect Percentage		61.82%				
1579													
1580	<b>UCL Statistics</b>												
1581	<b>Normal Distribution Test with Detected Values Only</b>					<b>Lognormal Distribution Test with Detected Values Only</b>							
1582	Shapiro Wilk Test Statistic		0.503				Shapiro Wilk Test Statistic		0.964				
1583	5% Shapiro Wilk Critical Value		0.92				5% Shapiro Wilk Critical Value		0.92				
1584	<b>Data not Normal at 5% Significance Level</b>					<b>Data appear Lognormal at 5% Significance Level</b>							
1585													
1586	<b>Assuming Normal Distribution</b>					<b>Assuming Lognormal Distribution</b>							
1587	DL/2 Substitution Method						DL/2 Substitution Method						
1588	Mean		4.453				Mean		-0.556				
1589	SD		11.93				SD		2.118				
1590	95% DL/2 (t) UCL		7.146				95% H-Stat (DL/2) UCL		16.52				
1591													
1592	Maximum Likelihood Estimate(MLE) Method		N/A				Log ROS Method						
1593	<b>MLE yields a negative mean</b>						Mean in Log Scale		-0.531				
1594							SD in Log Scale		2.26				
1595							Mean in Original Scale		4.485				
1596							SD in Original Scale		11.92				
1597							95% t UCL		7.176				
1598							95% Percentile Bootstrap UCL		7.564				
1599							95% BCA Bootstrap UCL		8.813				
1600							95% H-UCL		26.68				
1601													
1602	<b>Gamma Distribution Test with Detected Values Only</b>					<b>Data Distribution Test with Detected Values Only</b>							
1603	k star (bias corrected)		0.671				<b>Data appear Gamma Distributed at 5% Significance Level</b>						
1604	Theta Star		13.85										
1605	nu star		34.88										
1606													
1607	A-D Test Statistic		0.565				<b>Nonparametric Statistics</b>						
1608	5% A-D Critical Value		0.786				<b>Kaplan-Meier (KM) Method</b>						
1609	K-S Test Statistic		0.786				Mean		4.512				
1610	5% K-S Critical Value		0.178				SD		11.8				
1611	<b>Data appear Gamma Distributed at 5% Significance Level</b>						SE of Mean		1.623				
1612							95% KM (t) UCL		7.228				







	A	B	C	D	E	F	G	H	I	J	K	L										
1769	<b>Note:</b> Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.																					
1770	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)																					
1771	and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.																					
1772																						
1773																						
1774	<b>Mercury</b>																					
1775																						
1776	<b>General Statistics</b>																					
1777	Number of Valid Data		55		Number of Detected Data		8															
1778	Number of Distinct Detected Data		7		Number of Non-Detect Data		47															
1779							Percent Non-Detects		85.45%													
1780																						
1781	<b>Raw Statistics</b>				<b>Log-transformed Statistics</b>																	
1782	Minimum Detected		0.075		Minimum Detected		-2.59															
1783	Maximum Detected		0.22		Maximum Detected		-1.514															
1784	Mean of Detected		0.146		Mean of Detected		-1.999															
1785	SD of Detected		0.0587		SD of Detected		0.425															
1786	Minimum Non-Detect		0.07		Minimum Non-Detect		-2.659															
1787	Maximum Non-Detect		0.07		Maximum Non-Detect		-2.659															
1788																						
1789																						
1790	<b>Warning: There are only 8 Detected Values in this data</b>																					
1791	<b>Note:</b> It should be noted that even though bootstrap may be performed on this data set																					
1792	the resulting calculations may not be reliable enough to draw conclusions																					
1793																						
1794	<b>It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.</b>																					
1795																						
1796																						
1797	<b>UCL Statistics</b>																					
1798	<b>Normal Distribution Test with Detected Values Only</b>				<b>Lognormal Distribution Test with Detected Values Only</b>																	
1799	Shapiro Wilk Test Statistic		0.891		Shapiro Wilk Test Statistic		0.902															
1800	5% Shapiro Wilk Critical Value		0.818		5% Shapiro Wilk Critical Value		0.818															
1801	<b>Data appear Normal at 5% Significance Level</b>				<b>Data appear Lognormal at 5% Significance Level</b>																	
1802																						
1803	<b>Assuming Normal Distribution</b>				<b>Assuming Lognormal Distribution</b>																	
1804	DL/2 Substitution Method				DL/2 Substitution Method																	
1805	Mean		0.0512		Mean		-3.155															
1806	SD		0.0449		SD		0.505															
1807	95% DL/2 (t) UCL		0.0613		95% H-Stat (DL/2) UCL		0.0551															
1808																						
1809	Maximum Likelihood Estimate(MLE) Method		N/A		Log ROS Method																	
1810	<b>MLE yields a negative mean</b>				<b>Mean in Log Scale</b>																	
1811					SD in Log Scale		1.107															
1812					Mean in Original Scale		0.0419															
1813					SD in Original Scale		0.0512															
1814					95% t UCL		0.0535															
1815					95% Percentile Bootstrap UCL		0.0536															
1816					95% BCA Bootstrap UCL		0.0553															
1817					95% H-UCL		0.0627															
1818																						
1819	<b>Gamma Distribution Test with Detected Values Only</b>				<b>Data Distribution Test with Detected Values Only</b>																	
1820	k star (bias corrected)		4.293		Data appear Normal at 5% Significance Level																	

	A	B	C	D	E	F	G	H	I	J	K	L
1821					Theta Star	0.0341						
1822					nu star	68.68						
1823												
1824					A-D Test Statistic	0.416						<b>Nonparametric Statistics</b>
1825					5% A-D Critical Value	0.718						Kaplan-Meier (KM) Method
1826					K-S Test Statistic	0.718					Mean	0.0854
1827					5% K-S Critical Value	0.295					SD	0.0327
1828					Data appear Gamma Distributed at 5% Significance Level						SE of Mean	0.00472
1829											95% KM (t) UCL	0.0933
1830					Assuming Gamma Distribution						95% KM (z) UCL	0.0931
1831					Gamma ROS Statistics using Extrapolated Data						95% KM (jackknife) UCL	0.0951
1832					Minimum	0.000001					95% KM (bootstrap t) UCL	0.0946
1833					Maximum	0.22					95% KM (BCA) UCL	0.129
1834					Mean	0.0215					95% KM (Percentile Bootstrap) UCL	0.12
1835					Median	0.000001					95% KM (Chebyshev) UCL	0.106
1836					SD	0.0561					97.5% KM (Chebyshev) UCL	0.115
1837					k star	0.107					99% KM (Chebyshev) UCL	0.132
1838					Theta star	0.201						
1839					Nu star	11.77						<b>Potential UCLs to Use</b>
1840					AppChi2	5.078					95% KM (t) UCL	0.0933
1841					95% Gamma Approximate UCL (Use when n >= 40)	0.0498					95% KM (Percentile Bootstrap) UCL	0.12
1842					95% Adjusted Gamma UCL (Use when n < 40)	0.051						
1843					Note: DL/2 is not a recommended method.							
1844												
1845					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
1846					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
1847					For additional insight, the user may want to consult a statistician.							
1848												
1849												
1850					Methane							
1851												
1852					General Statistics							
1853					Number of Valid Data	84					Number of Detected Data	80
1854					Number of Distinct Detected Data	71					Number of Non-Detect Data	4
1855											Percent Non-Detects	4.76%
1856												
1857					Raw Statistics						Log-transformed Statistics	
1858					Minimum Detected	0.087					Minimum Detected	-2.442
1859					Maximum Detected	7700					Maximum Detected	8.949
1860					Mean of Detected	1797					Mean of Detected	4.778
1861					SD of Detected	2259					SD of Detected	3.513
1862					Minimum Non-Detect	0.074					Minimum Non-Detect	-2.604
1863					Maximum Non-Detect	0.074					Maximum Non-Detect	-2.604
1864												
1865					UCL Statistics							
1866												
1867					Normal Distribution Test with Detected Values Only						Lognormal Distribution Test with Detected Values Only	
1868					Lilliefors Test Statistic	0.256					Lilliefors Test Statistic	0.177
1869					5% Lilliefors Critical Value	0.0991					5% Lilliefors Critical Value	0.0991
1870					Data not Normal at 5% Significance Level						Data not Lognormal at 5% Significance Level	
1871												
1872					Assuming Normal Distribution						Assuming Lognormal Distribution	

	A	B	C	D	E	F	G	H	I	J	K	L								
1873	DL/2 Substitution Method								DL/2 Substitution Method											
1874	Mean				1711				Mean											
1875	SD				2237				SD											
1876	95% DL/2 (t) UCL				2117				95% H-Stat (DL/2) UCL											
1877																				
1878	Maximum Likelihood Estimate(MLE) Method								Log ROS Method											
1879	Mean				1647				Mean in Log Scale											
1880	SD				2304				SD in Log Scale											
1881	95% MLE (t) UCL				2065				Mean in Original Scale											
1882	95% MLE (Tiku) UCL				2037				SD in Original Scale											
1883									95% t UCL											
1884									95% Percentile Bootstrap UCL											
1885									95% BCA Bootstrap UCL											
1886									95% H UCL											
1887																				
1888	<b>Gamma Distribution Test with Detected Values Only</b>				<b>Data Distribution Test with Detected Values Only</b>															
1889	k star (bias corrected)				0.258				<b>Data do not follow a Discernable Distribution (0.05)</b>											
1890	Theta Star				6951															
1891	nu star				41.36															
1892																				
1893	A-D Test Statistic				3.511				<b>Nonparametric Statistics</b>											
1894	5% A-D Critical Value				0.883				Kaplan-Meier (KM) Method											
1895	K-S Test Statistic				0.883				Mean											
1896	5% K-S Critical Value				0.109				SD											
1897	<b>Data not Gamma Distributed at 5% Significance Level</b>								SE of Mean											
1898									95% KM (t) UCL											
1899	<b>Assuming Gamma Distribution</b>								95% KM (z) UCL											
1900	Gamma ROS Statistics using Extrapolated Data								95% KM (jackknife) UCL											
1901	Minimum				0.087				95% KM (bootstrap t) UCL											
1902	Maximum				7700				95% KM (BCA) UCL											
1903	Mean				1713				95% KM (Percentile Bootstrap) UCL											
1904	Median				135				95% KM (Chebyshev) UCL											
1905	SD				2236				97.5% KM (Chebyshev) UCL											
1906	k star				0.259				99% KM (Chebyshev) UCL											
1907	Theta star				6626															
1908	Nu star				43.44				<b>Potential UCLs to Use</b>											
1909	AppChi2				29.32				97.5% KM (Chebyshev) UCL											
1910	95% Gamma Approximate UCL (Use when n >= 40)				2538															
1911	95% Adjusted Gamma UCL (Use when n < 40)				2555															
1912	<b>Note: DL/2 is not a recommended method.</b>																			
1913																				
1914	<b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>																			
1915	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).																			
1916	For additional insight, the user may want to consult a statistician.																			
1917																				
1918																				
1919	<b>Methyl tert-butyl ether</b>																			
1920																				
1921	<b>General Statistics</b>																			
1922	Number of Valid Data				84				Number of Detected Data											
1923	Number of Distinct Detected Data				23				Number of Non-Detect Data											
1924									Percent Non-Detects											

	A	B	C	D	E	F	G	H	I	J	K	L	
1925													
1926	<b>Raw Statistics</b>						<b>Log-transformed Statistics</b>						
1927				Minimum Detected	0.95			Minimum Detected	-0.0513				
1928				Maximum Detected	20			Maximum Detected	2.996				
1929				Mean of Detected	3.769			Mean of Detected	0.989				
1930				SD of Detected	4.335			SD of Detected	0.736				
1931				Minimum Non-Detect	0.74			Minimum Non-Detect	-0.301				
1932				Maximum Non-Detect	1900			Maximum Non-Detect	7.55				
1933													
1934	Note: Data have multiple DLs - Use of KM Method is recommended							Number treated as Non-Detect	84				
1935	For all methods (except KM, DL/2, and ROS Methods),							Number treated as Detected	0				
1936	Observations < Largest ND are treated as NDs							Single DL Non-Detect Percentage	100.00%				
1937													
1938	<b>UCL Statistics</b>												
1939	<b>Normal Distribution Test with Detected Values Only</b>						<b>Lognormal Distribution Test with Detected Values Only</b>						
1940				Shapiro Wilk Test Statistic	0.584			Shapiro Wilk Test Statistic	0.901				
1941				5% Shapiro Wilk Critical Value	0.924			5% Shapiro Wilk Critical Value	0.924				
1942	<b>Data not Normal at 5% Significance Level</b>						<b>Data not Lognormal at 5% Significance Level</b>						
1943													
1944	<b>Assuming Normal Distribution</b>						<b>Assuming Lognormal Distribution</b>						
1945				DL/2 Substitution Method				DL/2 Substitution Method					
1946				Mean	15.33			Mean	0.234				
1947				SD	103.9			SD	1.498				
1948				95% DL/2 (t) UCL	34.19			95% H-Stat (DL/2) UCL	6.117				
1949													
1950				Maximum Likelihood Estimate(MLE) Method	N/A			Log ROS Method					
1951	<b>MLE method failed to converge properly</b>							Mean in Log Scale	-0.334				
1952								SD in Log Scale	1.232				
1953								Mean in Original Scale	1.585				
1954								SD in Original Scale	2.935				
1955								95% t UCL	2.117				
1956								95% Percentile Bootstrap UCL	2.149				
1957								95% BCA Bootstrap UCL	2.296				
1958								95% H-UCL	2.138				
1959													
1960	<b>Gamma Distribution Test with Detected Values Only</b>						<b>Data Distribution Test with Detected Values Only</b>						
1961				k star (bias corrected)	1.478			<b>Data do not follow a Discernable Distribution (0.05)</b>					
1962				Theta Star	2.55								
1963				nu star	82.76								
1964													
1965				A-D Test Statistic	1.892			<b>Nonparametric Statistics</b>					
1966				5% A-D Critical Value	0.761			Kaplan-Meier (KM) Method					
1967				K-S Test Statistic	0.761				Mean	1.997			
1968				5% K-S Critical Value	0.168				SD	2.876			
1969	<b>Data not Gamma Distributed at 5% Significance Level</b>							SE of Mean	0.332				
1970								95% KM (t) UCL	2.549				
1971	<b>Assuming Gamma Distribution</b>							95% KM (z) UCL	2.542				
1972				Gamma ROS Statistics using Extrapolated Data				95% KM (jackknife) UCL	2.532				
1973				Minimum	0.000001			95% KM (bootstrap t) UCL	3.053				
1974				Maximum	20			95% KM (BCA) UCL	2.775				
1975				Mean	1.293			95% KM (Percentile Bootstrap) UCL	2.641				
1976				Median	0.000001			95% KM (Chebyshev) UCL	3.443				

	A	B	C	D	E	F	G	H	I	J	K	L	
1977					SD	3.054			97.5% KM (Chebyshev) UCL			4.068	
1978					k star	0.0974			99% KM (Chebyshev) UCL			5.297	
1979					Theta star	13.27							
1980					Nu star	16.37							
1981					AppChi2	8.223			95% KM (t) UCL			2.549	
1982					95% Gamma Approximate UCL (Use when n >= 40)	2.574			95% KM (% Bootstrap) UCL			2.641	
1983					95% Adjusted Gamma UCL (Use when n < 40)	2.606							
1984	<b>Note: DL/2 is not a recommended method.</b>												
1985													
1986	<b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>												
1987	<b>These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).</b>												
1988	<b>For additional insight, the user may want to consult a statistician.</b>												
1989													
1990													
1991	<b>m-Xylene &amp; p-Xylene</b>												
1992													
1993	<b>General Statistics</b>												
1994	Number of Valid Data		93				Number of Detected Data					28	
1995	Number of Distinct Detected Data		26				Number of Non-Detect Data					65	
1996							Percent Non-Detects					69.89%	
1997													
1998	<b>Raw Statistics</b>				<b>Log-transformed Statistics</b>								
1999	Minimum Detected		1.6				Minimum Detected					0.47	
2000	Maximum Detected		39000				Maximum Detected					10.57	
2001	Mean of Detected		2917				Mean of Detected					4.253	
2002	SD of Detected		7780				SD of Detected					3.345	
2003	Minimum Non-Detect		1				Minimum Non-Detect					0	
2004	Maximum Non-Detect		4000				Maximum Non-Detect					8.294	
2005													
2006	Note: Data have multiple DLs - Use of KM Method is recommended				Number treated as Non-Detect								88
2007	For all methods (except KM, DL/2, and ROS Methods),				Number treated as Detected								5
2008	Observations < Largest ND are treated as NDs				Single DL Non-Detect Percentage								94.62%
2009													
2010	<b>UCL Statistics</b>												
2011	<b>Normal Distribution Test with Detected Values Only</b>				<b>Lognormal Distribution Test with Detected Values Only</b>								
2012	Shapiro Wilk Test Statistic		0.431				Shapiro Wilk Test Statistic						0.883
2013	5% Shapiro Wilk Critical Value		0.924				5% Shapiro Wilk Critical Value						0.924
2014	<b>Data not Normal at 5% Significance Level</b>				<b>Data not Lognormal at 5% Significance Level</b>								
2015													
2016	<b>Assuming Normal Distribution</b>				<b>Assuming Lognormal Distribution</b>								
2017	DL/2 Substitution Method						DL/2 Substitution Method						
2018	Mean		900.4				Mean						1.138
2019	SD		4425				SD						2.865
2020	95% DL/2 (t) UCL		1663				95% H-Stat (DL/2) UCL						735.2
2021													
2022	Maximum Likelihood Estimate(MLE) Method		N/A				Log ROS Method						
2023	<b>MLE yields a negative mean</b>				<b>Mean in Log Scale</b>								-3.258
2024							SD in Log Scale						6.381
2025							Mean in Original Scale						878.4
2026							SD in Original Scale						4424
2027							95% t UCL						1641
2028							95% Percentile Bootstrap UCL						1703















	A	B	C	D	E	F	G	H	I	J	K	L								
2393	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).																			
2394	Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.																			
2395	The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.																			
2396	Those methods will return a 'N/A' value on your output display!																			
2397	It is necessary to have 4 or more Distinct Values for bootstrap methods.																			
2398	However, results obtained using 4 to 9 distinct values may not be reliable.																			
2399	It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.																			
2400																				
2401																				
2402																				
2403																				
2404																				
2405	<b>UCL Statistics</b>																			
2406	<b>Normal Distribution Test with Detected Values Only</b>				<b>Lognormal Distribution Test with Detected Values Only</b>															
2407	Shapiro Wilk Test Statistic		N/A		Shapiro Wilk Test Statistic		N/A													
2408	5% Shapiro Wilk Critical Value		N/A		5% Shapiro Wilk Critical Value		N/A													
2409	<b>Data not Normal at 5% Significance Level</b>				<b>Data not Lognormal at 5% Significance Level</b>															
2410																				
2411	<b>Assuming Normal Distribution</b>				<b>Assuming Lognormal Distribution</b>															
2412	DL/2 Substitution Method				DL/2 Substitution Method															
2413	Mean		0.179		Mean		-2.077													
2414	SD		0.308		SD		0.593													
2415	95% DL/2 (t) UCL		0.248		95% H-Stat (DL/2) UCL		0.175													
2416																				
2417	Maximum Likelihood Estimate(MLE) Method		N/A		Log ROS Method															
2418	<b>MLE method failed to converge properly</b>				Mean in Log Scale		N/A													
2419					SD in Log Scale		N/A													
2420					Mean in Original Scale		N/A													
2421					SD in Original Scale		N/A													
2422					95% t UCL		N/A													
2423					95% Percentile Bootstrap UCL		N/A													
2424					95% BCA Bootstrap UCL		N/A													
2425					95% H-UCL		N/A													
2426																				
2427	<b>Gamma Distribution Test with Detected Values Only</b>				<b>Data Distribution Test with Detected Values Only</b>															
2428	k star (bias corrected)		N/A		Data do not follow a Discernable Distribution (0.05)															
2429	Theta Star		N/A																	
2430	nu star		N/A																	
2431																				
2432	A-D Test Statistic		N/A		<b>Nonparametric Statistics</b>															
2433	5% A-D Critical Value		N/A		Kaplan-Meier (KM) Method															
2434	K-S Test Statistic		N/A		Mean		0.62													
2435	5% K-S Critical Value		N/A		SD		0.00136													
2436	<b>Data not Gamma Distributed at 5% Significance Level</b>				SE of Mean		0.0002643													
2437					95% KM (t) UCL		0.621													
2438	<b>Assuming Gamma Distribution</b>				95% KM (z) UCL		0.621													
2439	Gamma ROS Statistics using Extrapolated Data				95% KM (jackknife) UCL		0.627													
2440	Minimum		N/A		95% KM (bootstrap t) UCL		N/A													
2441	Maximum		N/A		95% KM (BCA) UCL		0.63													
2442	Mean		N/A		95% KM (Percentile Bootstrap) UCL		0.63													
2443	Median		N/A		95% KM (Chebyshev) UCL		0.621													
2444	SD		N/A		97.5% KM (Chebyshev) UCL		0.622													

A	B	C	D	E	F	G	H	I	J	K	L
2445				k star	N/A			99% KM (Chebyshev) UCL		0.623	
2446				Theta star	N/A						
2447				Nu star	N/A			Potential UCLs to Use			
2448				AppChi2	N/A			95% KM (t) UCL		0.621	
2449	95% Gamma Approximate UCL (Use when n >= 40)				N/A			95% KM (% Bootstrap) UCL		0.63	
2450	95% Adjusted Gamma UCL (Use when n < 40)				N/A						
2451	Note: DL/2 is not a recommended method.										
2452											
2453	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
2454	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
2455	For additional insight, the user may want to consult a statistician.										
2456											
2457											
2458	Selenium										
2459											
2460					General Statistics						
2461	Number of Valid Data			55				Number of Detected Data		2	
2462	Number of Distinct Detected Data				2			Number of Non-Detect Data		53	
2463								Percent Non-Detects		96.36%	
2464											
2465	Raw Statistics					Log-transformed Statistics					
2466	Minimum Detected			4.4				Minimum Detected		1.482	
2467	Maximum Detected				7.2			Maximum Detected		1.974	
2468	Mean of Detected				5.8			Mean of Detected		1.728	
2469	SD of Detected			1.98				SD of Detected		0.348	
2470	Minimum Non-Detect				4			Minimum Non-Detect		1.386	
2471	Maximum Non-Detect				4			Maximum Non-Detect		1.386	
2472											
2473											
2474	Warning: Data set has only 2 Distinct Detected Values.										
2475	This may not be adequate enough to compute meaningful and reliable test statistics and estimates.										
2476	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).										
2477											
2478	Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.										
2479											
2480	The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.										
2481	Those methods will return a 'N/A' value on your output display!										
2482											
2483	It is necessary to have 4 or more Distinct Values for bootstrap methods.										
2484	However, results obtained using 4 to 9 distinct values may not be reliable.										
2485	It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.										
2486											
2487											
2488	UCL Statistics										
2489	Normal Distribution Test with Detected Values Only					Lognormal Distribution Test with Detected Values Only					
2490	Shapiro Wilk Test Statistic			N/A				Shapiro Wilk Test Statistic		N/A	
2491	5% Shapiro Wilk Critical Value			N/A				5% Shapiro Wilk Critical Value		N/A	
2492	Data not Normal at 5% Significance Level					Data not Lognormal at 5% Significance Level					
2493											
2494	Assuming Normal Distribution					Assuming Lognormal Distribution					
2495	DL/2 Substitution Method							DL/2 Substitution Method			
2496	Mean			2.138				Mean		0.731	

	A	B	C	D	E	F	G	H	I	J	K	L
2497					SD	0.767				SD	0.201	
2498					95% DL/2 (t) UCL	2.311				95% H-Stat (DL/2) UCL	2.221	
2499												
2500				Maximum Likelihood Estimate(MLE) Method	N/A				Log ROS Method			
2501				MLE method failed to converge properly					Mean in Log Scale	N/A		
2502									SD in Log Scale	N/A		
2503									Mean in Original Scale	N/A		
2504									SD in Original Scale	N/A		
2505									95% t UCL	N/A		
2506									95% Percentile Bootstrap UCL	N/A		
2507									95% BCA Bootstrap UCL	N/A		
2508									95% H-UCL	N/A		
2509												
2510				Gamma Distribution Test with Detected Values Only			Data Distribution Test with Detected Values Only					
2511				k star (bias corrected)	N/A		Data do not follow a Discernable Distribution (0.05)					
2512				Theta Star	N/A							
2513				nu star	N/A							
2514												
2515				A-D Test Statistic	N/A		Nonparametric Statistics					
2516				5% A-D Critical Value	N/A		Kaplan-Meier (KM) Method					
2517				K-S Test Statistic	N/A			Mean	4.451			
2518				5% K-S Critical Value	N/A			SD	0.374			
2519				Data not Gamma Distributed at 5% Significance Level			SE of Mean	0.0713				
2520							95% KM (t) UCL	4.57				
2521				Assuming Gamma Distribution			95% KM (z) UCL	4.568				
2522				Gamma ROS Statistics using Extrapolated Data			95% KM (jackknife) UCL	N/A				
2523				Minimum	N/A		95% KM (bootstrap t) UCL	N/A				
2524				Maximum	N/A		95% KM (BCA) UCL	N/A				
2525				Mean	N/A		95% KM (Percentile Bootstrap) UCL	N/A				
2526				Median	N/A		95% KM (Chebyshev) UCL	4.762				
2527				SD	N/A		97.5% KM (Chebyshev) UCL	4.896				
2528				k star	N/A		99% KM (Chebyshev) UCL	5.161				
2529				Theta star	N/A							
2530				Nu star	N/A		Potential UCLs to Use					
2531				AppChi2	N/A		95% KM (t) UCL	4.57				
2532				95% Gamma Approximate UCL (Use when n >= 40)	N/A		95% KM (% Bootstrap) UCL	N/A				
2533				95% Adjusted Gamma UCL (Use when n < 40)	N/A							
2534				Note: DL/2 is not a recommended method.								
2535												
2536				Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
2537				These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).								
2538				For additional insight, the user may want to consult a statistician.								
2539												
2540												
2541	Silver											
2542												
2543				General Statistics								
2544				Number of Valid Data	55		Number of Detected Data	0				
2545				Number of Distinct Detected Data	0		Number of Non-Detect Data	55				
2546							Percent Non-Detects	100.00%				
2547												
2548				Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								

	A	B	C	D	E	F	G	H	I	J	K	L																				
2549	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!																															
2550	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).																															
2551	The data set for variable Silver was not processed!																															
2552																																
2553																																
2554																																
2555																																
2556	Styrene																															
2557																																
2558	General Statistics																															
2559	Number of Valid Data			55			Number of Detected Data			0																						
2560	Number of Distinct Detected Data			0			Number of Non-Detect Data			55																						
2561							Percent Non-Detects			100.00%																						
2562																																
2563	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!																															
2564	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!																															
2565	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).																															
2566																																
2567	The data set for variable Styrene was not processed!																															
2568																																
2569																																
2570																																
2571	Sulfolane																															
2572																																
2573	General Statistics																															
2574	Number of Valid Data			84			Number of Detected Data			64																						
2575	Number of Distinct Detected Data			50			Number of Non-Detect Data			20																						
2576							Percent Non-Detects			23.81%																						
2577																																
2578	Raw Statistics				Log-transformed Statistics																											
2579	Minimum Detected				0.63				Minimum Detected																							
2580	Maximum Detected				14000				Maximum Detected																							
2581	Mean of Detected				411.3				Mean of Detected																							
2582	SD of Detected				1785				SD of Detected																							
2583	Minimum Non-Detect				0.55				Minimum Non-Detect																							
2584	Maximum Non-Detect				0.61				Maximum Non-Detect																							
2585																																
2586	Note: Data have multiple DLs - Use of KM Method is recommended				Number treated as Non-Detect																											
2587	For all methods (except KM, DL/2, and ROS Methods),				Number treated as Detected																											
2588	Observations < Largest ND are treated as NDs				Single DL Non-Detect Percentage																											
2589																																
2590	UCL Statistics																															
2591	Normal Distribution Test with Detected Values Only					Lognormal Distribution Test with Detected Values Only																										
2592	Lilliefors Test Statistic					Lilliefors Test Statistic																										
2593	5% Lilliefors Critical Value					5% Lilliefors Critical Value																										
2594	Data not Normal at 5% Significance Level					Data appear Lognormal at 5% Significance Level																										
2595																																
2596	Assuming Normal Distribution						Assuming Lognormal Distribution																									
2597	DL/2 Substitution Method						DL/2 Substitution Method																									
2598	Mean						Mean																									
2599	SD						SD																									
2600	95% DL/2 (t) UCL						95% H-Stat (DL/2) UCL																									



	A	B	C	D	E	F	G	H	I	J	K	L
2653												
2654					The data set for variable Tetrachloroethene was not processed!							
2655												
2656												
2657												
2658	Toluene											
2659												
2660					General Statistics							
2661				Number of Valid Data	93					Number of Detected Data	13	
2662				Number of Distinct Detected Data	13					Number of Non-Detect Data	80	
2663										Percent Non-Detects	86.02%	
2664												
2665				Raw Statistics						Log-transformed Statistics		
2666				Minimum Detected	1.5					Minimum Detected	0.405	
2667				Maximum Detected	4500					Maximum Detected	8.412	
2668				Mean of Detected	809.8					Mean of Detected	4.493	
2669				SD of Detected	1352					SD of Detected	2.681	
2670				Minimum Non-Detect	0.7					Minimum Non-Detect	-0.357	
2671				Maximum Non-Detect	1800					Maximum Non-Detect	7.496	
2672												
2673	Note: Data have multiple DLs - Use of KM Method is recommended									Number treated as Non-Detect	90	
2674	For all methods (except KM, DL/2, and ROS Methods),									Number treated as Detected	3	
2675	Observations < Largest ND are treated as NDs									Single DL Non-Detect Percentage	96.77%	
2676												
2677				UCL Statistics								
2678				Normal Distribution Test with Detected Values Only						Lognormal Distribution Test with Detected Values Only		
2679				Shapiro Wilk Test Statistic	0.665					Shapiro Wilk Test Statistic	0.934	
2680				5% Shapiro Wilk Critical Value	0.866					5% Shapiro Wilk Critical Value	0.866	
2681	Data not Normal at 5% Significance Level									Data appear Lognormal at 5% Significance Level		
2682												
2683				Assuming Normal Distribution						Assuming Lognormal Distribution		
2684				DL/2 Substitution Method						DL/2 Substitution Method		
2685				Mean	123.3					Mean	-0.0732	
2686				SD	569.6					SD	2.268	
2687				95% DL/2 (t) UCL	221.4					95% H-Stat (DL/2) UCL	29.5	
2688												
2689	Maximum Likelihood Estimate(MLE) Method			N/A						Log ROS Method		
2690	MLE yields a negative mean									Mean in Log Scale	-5.35	
2691										SD in Log Scale	5.989	
2692										Mean in Original Scale	113.3	
2693										SD in Original Scale	563.9	
2694										95% t UCL	210.5	
2695										95% Percentile Bootstrap UCL	217.6	
2696										95% BCA Bootstrap UCL	276.4	
2697										95% H-UCL	79570772	
2698												
2699				Gamma Distribution Test with Detected Values Only						Data Distribution Test with Detected Values Only		
2700				k star (bias corrected)	0.291					Data appear Gamma Distributed at 5% Significance Level		
2701				Theta Star	2788							
2702				nu star	7.553							
2703												
2704				A-D Test Statistic	0.613					Nonparametric Statistics		

	A	B	C	D	E	F	G	H	I	J	K	L
2705					5% A-D Critical Value	0.828				Kaplan-Meier (KM) Method		
2706					K-S Test Statistic	0.828				Mean	114.8	
2707					5% K-S Critical Value	0.256				SD	560.9	
2708					Data appear Gamma Distributed at 5% Significance Level				SE of Mean	60.57		
2709									95% KM (t) UCL	215.4		
2710					Assuming Gamma Distribution				95% KM (z) UCL	214.4		
2711					Gamma ROS Statistics using Extrapolated Data				95% KM (jackknife) UCL	210.3		
2712					Minimum	0.000001			95% KM (bootstrap t) UCL	352.5		
2713					Maximum	4500			95% KM (BCA) UCL	240.3		
2714					Mean	113.2			95% KM (Percentile Bootstrap) UCL	230.3		
2715					Median	0.000001			95% KM (Chebyshev) UCL	378.8		
2716					SD	563.9			97.5% KM (Chebyshev) UCL	493		
2717					k star	0.0597			99% KM (Chebyshev) UCL	717.4		
2718					Theta star	1895						
2719					Nu star	11.11			Potential UCLs to Use			
2720					AppChi2	4.648			95% KM (t) UCL	215.4		
2721					95% Gamma Approximate UCL (Use when n >= 40)	270.6						
2722					95% Adjusted Gamma UCL (Use when n < 40)	274.5						
2723					Note: DL/2 is not a recommended method.							
2724												
2725					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
2726					These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
2727					For additional insight, the user may want to consult a statistician.							
2728												
2729												
2730					Vanadium							
2731												
2732					General Statistics							
2733					Number of Valid Data	55			Number of Detected Data	18		
2734					Number of Distinct Detected Data	16			Number of Non-Detect Data	37		
2735									Percent Non-Detects	67.27%		
2736												
2737					Raw Statistics				Log-transformed Statistics			
2738					Minimum Detected	3			Minimum Detected	1.099		
2739					Maximum Detected	120			Maximum Detected	4.787		
2740					Mean of Detected	20.56			Mean of Detected	2.441		
2741					SD of Detected	28.95			SD of Detected	1.016		
2742					Minimum Non-Detect	3			Minimum Non-Detect	1.099		
2743					Maximum Non-Detect	3			Maximum Non-Detect	1.099		
2744												
2745												
2746					UCL Statistics							
2747					Normal Distribution Test with Detected Values Only				Lognormal Distribution Test with Detected Values Only			
2748					Shapiro Wilk Test Statistic	0.616			Shapiro Wilk Test Statistic	0.917		
2749					5% Shapiro Wilk Critical Value	0.897			5% Shapiro Wilk Critical Value	0.897		
2750					Data not Normal at 5% Significance Level				Data appear Lognormal at 5% Significance Level			
2751												
2752					Assuming Normal Distribution				Assuming Lognormal Distribution			
2753					DL/2 Substitution Method				DL/2 Substitution Method			
2754					Mean	7.736			Mean	1.072		
2755					SD	18.58			SD	1.12		
2756					95% DL/2 (t) UCL	11.93			95% H-Stat (DL/2) UCL	7.992		

	A	B	C	D	E	F	G	H	I	J	K	L	
2757													
2758	Maximum Likelihood Estimate(MLE) Method		N/A								Log ROS Method		
2759	MLE yields a negative mean										Mean in Log Scale	0.103	
2760											SD in Log Scale	2.086	
2761											Mean in Original Scale	7.208	
2762											SD in Original Scale	18.77	
2763											95% t UCL	11.45	
2764											95% Percentile Bootstrap UCL	11.74	
2765											95% BCA Bootstrap UCL	13.57	
2766											95% H-UCL	28.89	
2767													
2768	<b>Gamma Distribution Test with Detected Values Only</b>				<b>Data Distribution Test with Detected Values Only</b>								
2769	k star (bias corrected)	0.865				<b>Data Follow Appr. Gamma Distribution at 5% Significance Level</b>							
2770	Theta Star	23.77											
2771	nu star	31.13											
2772													
2773	A-D Test Statistic	1.168				<b>Nonparametric Statistics</b>							
2774	5% A-D Critical Value	0.767									Kaplan-Meier (KM) Method		
2775	K-S Test Statistic	0.767									Mean	8.745	
2776	5% K-S Critical Value	0.209									SD	18.08	
2777	<b>Data follow Appr. Gamma Distribution at 5% Significance Level</b>										SE of Mean	2.509	
2778											95% KM (t) UCL	12.94	
2779	<b>Assuming Gamma Distribution</b>										95% KM (z) UCL	12.87	
2780	Gamma ROS Statistics using Extrapolated Data										95% KM (jackknife) UCL	12.46	
2781	Minimum	0.000001									95% KM (bootstrap t) UCL	18.92	
2782	Maximum	120									95% KM (BCA) UCL	15.16	
2783	Mean	6.727									95% KM (Percentile Bootstrap) UCL	13.53	
2784	Median	0.000001									95% KM (Chebyshev) UCL	19.68	
2785	SD	18.94									97.5% KM (Chebyshev) UCL	24.41	
2786	k star	0.0879									99% KM (Chebyshev) UCL	33.71	
2787	Theta star	76.51											
2788	Nu star	9.672				<b>Potential UCLs to Use</b>							
2789	AppChi2	3.738									95% KM (t) UCL	12.94	
2790	95% Gamma Approximate UCL (Use when n >= 40)	17.41											
2791	95% Adjusted Gamma UCL (Use when n < 40)	17.88											
2792	<b>Note: DL/2 is not a recommended method.</b>												
2793													
2794	<b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>												
2795	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).												
2796	For additional insight, the user may want to consult a statistician.												
2797													
2798													
2799	Zinc												
2800													
2801	<b>General Statistics</b>												
2802	Number of Valid Data	55									Number of Detected Data	12	
2803	Number of Distinct Detected Data	11									Number of Non-Detect Data	43	
2804											Percent Non-Detects	78.18%	
2805													
2806	<b>Raw Statistics</b>				<b>Log-transformed Statistics</b>								
2807	Minimum Detected	9.9									Minimum Detected	2.293	
2808	Maximum Detected	740									Maximum Detected	6.607	

	A	B	C	D	E	F	G	H	I	J	K	L
2809					Mean of Detected	93.99				Mean of Detected		3.412
2810					SD of Detected	208				SD of Detected		1.295
2811					Minimum Non-Detect	8				Minimum Non-Detect		2.079
2812					Maximum Non-Detect	8				Maximum Non-Detect		2.079
2813												
2814												
2815						UCL Statistics						
2816					Normal Distribution Test with Detected Values Only			Lognormal Distribution Test with Detected Values Only				
2817					Shapiro Wilk Test Statistic	0.458		Shapiro Wilk Test Statistic		0.783		
2818					5% Shapiro Wilk Critical Value	0.859		5% Shapiro Wilk Critical Value		0.859		
2819					Data not Normal at 5% Significance Level			Data not Lognormal at 5% Significance Level				
2820												
2821					Assuming Normal Distribution			Assuming Lognormal Distribution				
2822					DL/2 Substitution Method			DL/2 Substitution Method				
2823					Mean	23.63		Mean		1.828		
2824					SD	101.1		SD		1.027		
2825					95% DL/2 (t) UCL	46.45		95% H-Stat (DL/2) UCL		14.67		
2826												
2827					Maximum Likelihood Estimate(MLE) Method	N/A		Log ROS Method				
2828					MLE yields a negative mean			Mean in Log Scale		-0.676		
2829								SD in Log Scale		2.988		
2830								Mean in Original Scale		21.1		
2831								SD in Original Scale		101.6		
2832								95% t UCL		44.03		
2833								95% Percentile Bootstrap UCL		46.78		
2834								95% BCA Bootstrap UCL		64.45		
2835								95% H-UCL		374.5		
2836												
2837					Gamma Distribution Test with Detected Values Only			Data Distribution Test with Detected Values Only				
2838					k star (bias corrected)	0.47		Data do not follow a Discernable Distribution (0.05)				
2839					Theta Star	199.9						
2840					nu star	11.29						
2841												
2842					A-D Test Statistic	1.799		Nonparametric Statistics				
2843					5% A-D Critical Value	0.781		Kaplan-Meier (KM) Method				
2844					K-S Test Statistic	0.781		Mean		28.25		
2845					5% K-S Critical Value	0.258		SD		99.29		
2846					Data not Gamma Distributed at 5% Significance Level			SE of Mean		13.98		
2847								95% KM (t) UCL		51.65		
2848					Assuming Gamma Distribution			95% KM (z) UCL		51.25		
2849					Gamma ROS Statistics using Extrapolated Data			95% KM (jackknife) UCL		49.45		
2850					Minimum	0.000001		95% KM (bootstrap t) UCL		208.5		
2851					Maximum	740		95% KM (BCA) UCL		60.94		
2852					Mean	20.51		95% KM (Percentile Bootstrap) UCL		54.52		
2853					Median	0.000001		95% KM (Chebyshev) UCL		89.2		
2854					SD	101.7		97.5% KM (Chebyshev) UCL		115.6		
2855					k star	0.0738		99% KM (Chebyshev) UCL		167.4		
2856					Theta star	277.9						
2857					Nu star	8.116		Potential UCLs to Use				
2858					AppChi2	2.802		95% KM (BCA) UCL		60.94		
2859					95% Gamma Approximate UCL (Use when n >= 40)	59.39						
2860					95% Adjusted Gamma UCL (Use when n < 40)	61.22						

